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PRACTICAL POULTRY KEEPING

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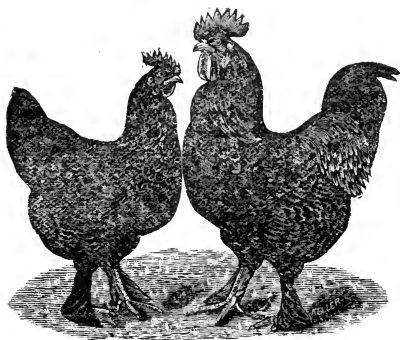
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PRACTICAL
POULTRY KEEPING,
AS I UNDERSTAND IT.

[FIFTH EDITION.]



G. M. T. JOHNSON,
BINGHAMTON, N. Y.

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BLW

TO THE READER.

THE successful farmer or fancier of to-day is the one who accepts the fact that stock perfectly acceptable ten years ago, is not acceptable to-day. The demand for something better comes every year. Especially is this the case in regard to poultry. For this reason many are now keeping good fowls carefully bred, and selling at high prices.

The call for better stock, and for information as to what is good stock, and the best mode of handling, comes from all sections.

The prices of books treating of poultry are too high for the generality of people. A book is wanted which every one who keeps a dozen fowls can afford to buy, and at the same time which gives all the information desired concerning the different varieties of fowls, and how best to handle them.

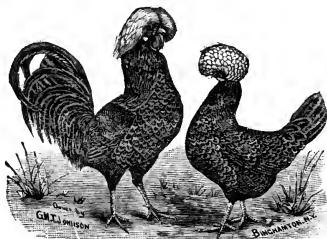
That book should contain all that is really valuable to the fancier who keeps fowls for pleasure, and the farmer who keeps fowls for profit. It should be plain, practical and simple. It should blow no horn in the interest of any class of men, or breed of fowls, and advertise no patent medicines, but be a plain and truthful talk between writer and reader.

In answer to this demand, as far as in me lies, I offer this little book : all of which is respectfully submitted to the reader.

G. M. T. JOHNSON.

BINGHAMTON, N. Y., June 1, 1886.

PRACTICAL POULTRY KEEPING.



THE HEN—the subject of this book—remains very much the same one year with another, as to her nature, and the best way of handling her ; and our aim is to get as good a knowledge as possible of her and her needs, that we may use her to our profit.

We will never know all. Experience and observation are continually showing us new facts, and our way should be to take possession of every new fact we can get, and call for more ; exchange notes with each other, and prove them.

In the spring of 1867 I issued my **POULTRY KEEPERS' HANDBOOK**, which was the nucleus of **PRACTICAL POULTRY KEEPING**, issued in the spring of 1880 ; second edition issued February 1, 1881 ; third edition issued January 1, 1883 ; fourth edition issued January 1, 1884.

On the getting out of each new edition I have had occasion to add more or less to the one preceding, as my observation and experience, in the intervening time, had taught me. Now, as I get out my fifth edition, I shall cut out some of my fourth, and add new matter which I deem of more importance to the keeper of poultry. I have observed some things over so many times, that to me they become laws, and I shall give them, even though I am in conflict with some generally accepted theories. I am pleased with the fact that many have written me, giving my former editions highest praise as a most practical book. Some authors have copied long paragraphs, and in places almost pages, but not telling their readers that they had copied,—which made a clear case of theft.

I do not theorize much. Many persons have been misled, and lost money by following theories. Parties have come to me rather complainingly because I do not fall in with teachings which they do not claim have ever been demonstrated, but are the notions of some poultryman.

I can only say, facts are the same, and we must accept of them. A fair trial will prove them, but the trial is always attended with expense. I, like others, may be mistaken, but I give this book a very modest title: "PRACTICAL POULTRY KEEPING, AS I UNDERSTAND IT."

The keeping of poultry successfully is one of the most simple accomplishments, and if there is one thing more than another that will characterize this little book, it is its simplicity. One of the greatest errors which writers have made, is the making it appear that the keeping of poultry successfully was some high art, attainable only at great expense. The appearance of a well-kept yard of fowls, as compared with a neglected yard, is as much the superior as high art is above ignorance, and will lend strength to the theory, but it is a mistake. It requires good judgment, simple and pure, first and last. (See Part II., POULTRY FOR PLEASURE AND POULTRY FOR PROFIT: "What is required for making the keeping of Poultry both pleasant and profitable?")

The greater mistake has been to the other extreme, and the greatest neglect has characterized the handling of fowls. I would be understood to say that great expenses are not necessary, but great care and personal attention are the main requisites to success.

I believe I am safe in saying, that in no other department of the farm has there been such advancement, of late years, as in the poultry yard; for one reason, that in no other department has there been such neglect and abuse; and another is, that there has been a general awakening among the people to the interest of the hen, commonly called the hen fever, the result of which has been to give her a higher place. It has been quite a common idea for a long time, that poultry needed but little or no care, and the idea was fully carried out in practice; any one could breed poultry; no need of papers and books on the subject. The scrawny, awkward, ill-shaped, limping, non-producing fowl which used to disgrace our farm-yards was the natural product of this notion. Where a person has an unlimited range, and wants to raise only a few for eggs and his own table, without regard to purity of blood or fine qualities, it is easy enough to breed poultry, such as it is. All he has to do is to let the hen manage her own affairs. But more attention is now

paid to this long neglected branch. People are not satisfied so easily. They want fine poultry,—large, good layers, and handsome. They are willing to give more attention to the fowls, believing they receive big returns for all extra care and expense, besides the pleasure derived. When fowls are raised in numbers higher than twenty or thirty, or more varieties than one on a farm, more attention and vigilance is required to keep the fowls in good growing condition, and to guard against disease, vermin and the like, to which the fowl in confinement is so subject. As the first rule to success, I would emphasize the old adage—

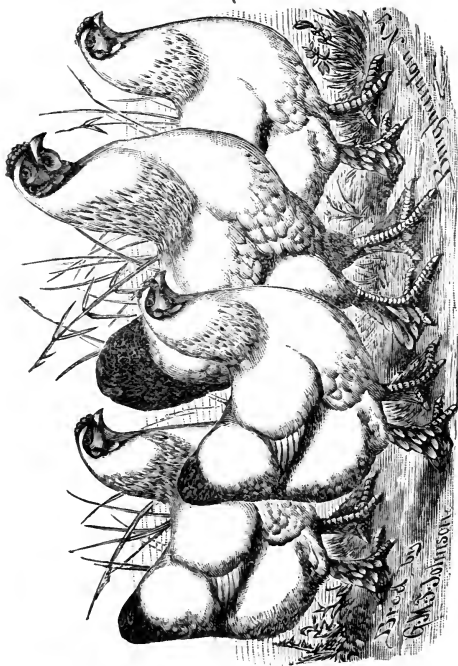
“He who by the plow would thrive,
Himself must either hold or drive.”

So, he who would succeed best in keeping poultry, must attend to his own flocks; keep an eye on every branch of the business; see that none of it is slighted; must not pervert the nature of the fowl, but must have ample accommodations, and such as are adapted to their wants; he himself must be willing to work; must have a system, and definite objects to be attained, and work to those ends.

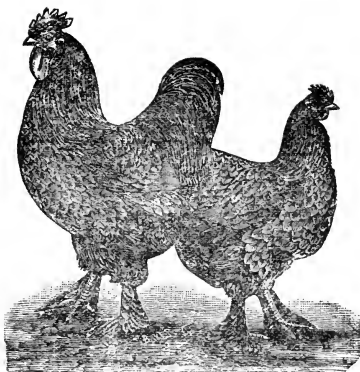
The hen should be regarded, by all who undertake to profit by her, as a machine. To succeed with her is to understand her necessities, and to do everything for her that will aid her along in her natural course, and remove all obstructions. This implies a well-built fowl, symmetrical, of strong blood, and pleasant to look upon. It implies that she should have ample, well ventilated and healthy quarters; that she should be fed with those things that will strengthen her and keep her healthy; that she should be protected from all attacks of vermin, and disease in every form; she should be made cheerful and happy. This is the substance of the business of breeding poultry for success.

Third rule: To handle the hen with as little loss of time and useless expense as possible.

These three heads are the substance of the following pages. He who can not attend to his own business, and do it himself, or tries to adapt the hen to something contrary to her nature; who crowds the machine to overwork, or neglects her wants, or is extravagant in outlays,—is the one who fails in the poultry business.



A GROUP OF LIGHT BRAHMA FOWLS.



PART I.

POULTRY HOUSES AND YARDS.

One of the most attractive features of a home, is a comely Poultry House. The fine barns and sheds, for horses and cattle, seem out of place without a good accompanying fowl house. The broad lawns look lonesome without a few fowls of some choice breed, and there is a dullness which makes a man homesick if he can not hear the grand crow of the cock, or the happy cackle of a hen ; and it will help to drive off a fit of melancholy to see chicks in a race for grasshoppers, or pulling at either end of a long worm.

The accommodations for fowls, such as houses and yards, can be made and arranged in such a way as will give the owner a feeling of pride every time he looks upon them, or shows a friend. They may be warm, dry, clean, well ventilated, healthy and comfortable (and all this they should be), and at little expense. They may also be so built and arranged, with but little if any extra expense, as to be pleasing to the eye, and in this way a source of pleasure to the owner. I regard of a great deal of importance the selection of a site. Much

depends on this afterwards. A person can well afford to spend several days arranging and trying different sites before he builds, and even after he does once get started, and finds he has made a mistake, it is better to tear down and build again, than to be hampered by some inconvenience or obstacle ever afterward. Of course one has to conform to grounds and other outbuildings many times. It is often best to fix up rooms in buildings already on the place. In that case fix them up as one's own judgment would suggest, but where a site is to be selected or a house to be built, these two very essential points must be kept in view: 1st, To guard against anything that would hurt or destroy; and, 2d, To advance everything that would tend to the prosperity of the flock. Select a site that will be convenient for handling, and near enough to the house to be able to protect them and care for them, but not so near as to be annoying. I should prefer a site where I could, whenever I wished, give the fowls full range of the yard, by opening little doors in the houses or yards. It sometimes comes very convenient to let them have full range, as they do no hurt, at certain seasons, but rather do good, by picking bugs, worms, seeds, etc., around the house, yard, barn and granary. At the same time, it is best to locate and build so we can protect our fowls from inclement weather or diseases, and fight all intruders with the advantage on our side. Skunks and owls do not mind the location of the hen-house much, but with rats it makes a great difference. I do not know of any other enemy the fowls have to contend with so annoying, or one so richly endowed with what is vulgarly called *cheek*. They will often come out in one's very presence, and, in spite of all our efforts, will carry off chickens as large as quails, and whole broods in two or three days, and perhaps eat them in the grass or vines within six feet of us, or under the stoop or walk on which we stand. They, of course, must have a hiding-place near,—perhaps under a barn or shed, or in a wall or pile of boards: without that they are never troublesome; and this furnishes quite a safeguard, to give them no place in which to hide. It is not best to locate a house near any such thing. It is almost impossible to get rid of them till we tear away their hiding-places. One or two good cats, which can discriminate between poultry and prey—(that is a very important point)—with full range round the coops, are very valuable.

Select a dry site. Dampness is disease and death to poultry. I think many yards are subject to ravages of chicken cholera, roup, and vermin, from a damp location, and there is no remedy other than to change the site.

FLOORS.

I prefer no floor other than earth, higher than the ground outside, to keep out the water. A board floor furnishes hiding-places for rats. It is well to cover the floor with sawdust, fine road dust, sand or ashes, to the depth of two inches, if convenient. It is an easy way to keep the house clean, and the ashes are well appreciated by the hens for a dust bath. If this is not convenient, throw in any top soil, and in either case rake off the droppings often, and change the dust or ashes as often as convenient. I have found leaves of shade trees, gathered in the fall and thrown in the houses, even to the depth of two feet, a most beneficial practice. The hens lay in them on cold days. They serve to keep the fowls clean, and add to the appearance of the house.

VENTILATION.

This is a very important part of the fowl house, and brings its own reward. If provided with pure air, clean food and water, and protected from rain, extreme heat and cold, and sudden changes, fowls will generally be well. The air gets to be very foul unless the house is provided with good ventilation. I have known flocks of fowls to be taken with canker and roup by being confined in close, tight houses; and I have known them to recover simply by giving them rooms with plenty of fresh and pure air. Air may be very cold, and yet very impure. Many houses are so built as to let in air enough through the cracks. This is wrong, as the wind blowing on the fowls causes them to take cold; but it is better than to have the building too tight. The house should be very tight against wind and rain, and the ventilation ample; as high in the peak as possible; also an opening at the bottom so arranged as not to allow a direct draft on the fowls at roost. Fresh air will come in the opening near the ground, and foul air pass out at the peak.

The opening for the fowls to pass out and in by, will often furnish sufficient ventilation near the ground; and during very windy and rainy weather, this opening should be closed. Where fowls are troubled with roup and canker, we should look well to the ventilation. One great objection to crowding fowls, is the fact that it is hard to give them the amount of fresh air necessary, without exposing them. If I were to be asked by what means I believed fowl diseases come more than by any other, I would say by foul air. One great consideration in favor of the Appletree fowl, is the fact that they get good air, and do not breathe that which is dead, or the fumes arising from heated and unclean ground.

ROOSTS.

They should be so built as to be for the comfort and health of the fowls. Round poles, one and a half or two inches in diameter, with bark on, are best. Observe the fowl when she selects her own roosting place. She will choose such limbs of trees as she can grasp with her feet. It is well to have them so arranged that they can be easily cleaned, either in their places or by taking them out. They should not be over eighteen inches from the ground, especially for the large fowls, that they may receive no injury in getting off. Many fowls, particularly of the large varieties, sustain serious damages by flying or jumping from high roosts. A fowl of eight or ten pounds' weight, jumping four or five feet, strikes very hard on its feet. Ladders are often provided for fowls to come down by, but they never use them if in a hurry, as at such times a fowl never thinks. The injuries received are often a hip or knee sprained, back twisted or foot caloused. Crooked combs and tails are often caused by roosting where they rub their combs and tails against sides of the house or floors above.

NESTS.

Considering the necessity of cleaning, and for the sake of convenience, all nests should be made movable. I consider a platform, about eighteen or twenty inches above the ground, and roosts five or six inches above this platform, furnish, under them, one of the best places for nests. The boxes for nests should be made twelve or fifteen inches square, and about the same in height; tight on all sides except the back, with an opening in the upper part of the back; the nest made in the box. There should be sufficient opening allowed between the nest-box and side of the building for the convenient passing and turning of the hen in going to and from her nest.

In this way the hens can be hid when they lay,—and they like seclusion. It serves as a preventive from hens eating eggs, as the nests are quite dark.

When gathering the eggs, it is only necessary to turn the boxes round. They are easily taken out and cleaned, and this should be done once or twice a year. The nests should be so roomy as not to damage the feathers, and no larger.

DOORS.

If convenient to put the door on the south or east side, it is preferable in our northern climate, as the cold winds will drive through every opening, no matter how small; but if it is not convenient,

special pains should be taken to shut out the wind. Narrow matched boards make the cheapest and most substantial door.

WINDOWS.

It is a great point gained when a house can have a southern exposure, and windows on the south side to let in the light and heat. Sunlight will do much to keep the house dry and fowls healthy. They bask in it and enjoy it. By putting windows as much to the sun as possible we have made quite a point to health in our flock. These windows should be made so as to slide, and narrow strips nailed over the openings, making it very cool and pleasant for summer use.

FEED BOXES.

One of the most convenient articles of furniture is a suitable feed box. It should be so built as to allow the fowl to put in its head, but not its feet. So strong is the propensity in the hen to scratch, and so fearful that she will forget how to act when she is so unspeakably happy as to get into a flower bed, that she will put her feet in the middle of a dish of feed, and scratch.

A good and cheap plan is to arrange a box, opening at the top by a lid, with slats at the side, running up and down. Put the feed in the box: the fowls will then get all they want, and leave the rest. Never throw soft feed on the ground or in the grass. It is a great waste.

DRINKING VESSELS.

All things considered, I believe galvanized iron dishes are the best. We can have them made of any size or shape. They are not easily broken, and will not rust. They can be cleansed with hot water, and with careful usage will last a dozen years. Earthen vessels protected against breaking, are good,—they are so easily cleaned.

The drinking vessels should be kept in a shady place, rinsed every day, and scalded every week. Fowl diseases are transmitted through the drinking vessels, to a great extent.

HOUSES—SMALL AND LARGE.

How large it is best to build, will depend entirely on what we are building for. If it is proposed to separate the flocks, and give each a good run, it will be best to build small houses, and allow but few fowls to the house. If it is necessary to put a larger number together, then the house must be larger. It is never safe to crowd the fowls. If the grounds are such that it is desirable to put two or three flocks of ten fowls each in the building, it will be necessary to give them double or three times the size of the house on the

ground ; or when it is desired to put as many as one hundred fowls in one building, it will necessarily be as much larger. It is not as easy to keep fowls clean and healthy, when so many run together in one building, as diseases and vermin spread so easily by contact.

When fowls are separated,* one yard may suffer the ravages of cholera, and the other not be affected.

PLANS FOR SMALL HOUSES.

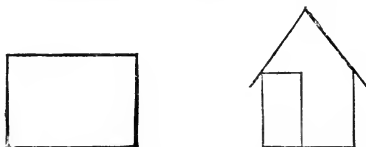
In many respects, houses so small as to be movable are to be preferred. It is so much easier tending them, and protecting them from rats and vermin. We can then generally give them greater runs ; it is easier keeping them clean ; if desired, they can be moved any distance, and the ground plowed and cultivated to crops, which is the quickest way to eradicate poisons.

I give here ground plan and upright view of small poultry house:

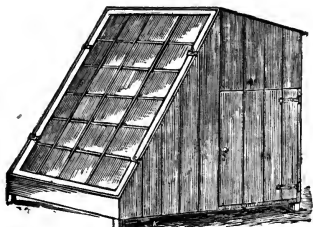


It is very convenient for moving, as it can be put on a sled or stone-boat, or can be carried by four men easily. It is suitable for a cock and four or five hens, or, if pressed to it, will accommodate twice that number. If built of ten-inch boards, they will cut with but little waste. Ground plan, 40 x 60 inches ; front, 40 inches on ground ; one side 3 feet high, the other 6 feet ; door, 18 or 20 inches by 3½ feet. For a window, it will require but one pane of glass. Ventilation near the peak.

Another, large enough for a cock and six or eight hens :

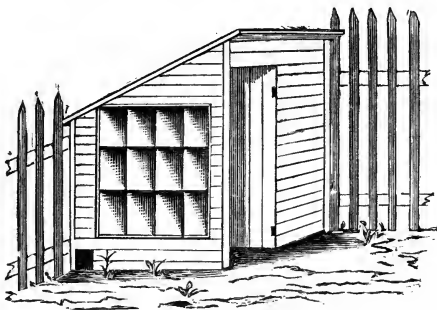


Ground plan, 50 x 70 inches ; front, 50 inches broad ; sides, 4 feet high ; center, 7½ feet high ; door, 4 feet high.



Here is a warm and cheap little coop, well adapted for a cock and five or six hens. It is 4 feet long, 3 feet wide, and 4 feet high. Sash, 3 x 4 feet, which may be raised or removed entirely. The size can easily be increased, if desired.

But the houses can be made still larger, and yet be movable. I have found the accompanying plan small enough where I wished to have a breeding pen of eight or ten fowls. I have tried several patterns, and like the arrangement of this the best :

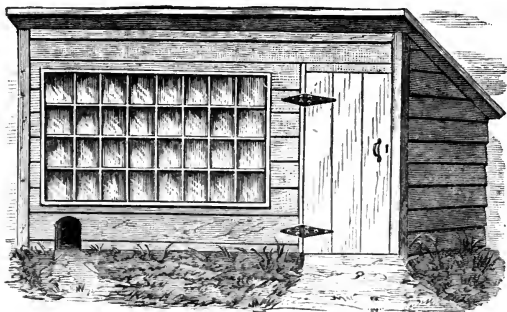


This little building is four feet by six on the ground. I first build a frame of boards ten or twelve inches wide, of the size of the ground plan, which I set perfectly level. I then put in dirt to the depth of about six inches, so it will be dry in all seasons, and on this frame I put the sills, made of 2 x 4 inch sticks. I next cut two corner boards six feet long, and two four feet long ; nail a six-foot board on each of the front corners, and plumb them ; nail four-

foot boards on the rear corners, and plumb them. I then nail a strip around the top from corner to corner, to nail the boards to,—and the frame is made. Next, side up, leaving places for doors and windows.

I have used matched and surfaced boards for sides and roof, which made a very tight house ; and by painting sides and roof, I have had very warm and serviceable little houses. These buildings are easily moved. The inside arrangement is very simple and convenient. At the rear of the house I place pieces of boards, of the right width, on the sills to raise the platform, which rests on them, about twelve inches high, and on these I place boards so as to make the platform about eighteen or twenty inches wide, and on these I place strips of board about six inches wide, and on these I place the roosts. Under this platform I arrange the boxes, open at the back, for nests. The hen, when wishing to lay, will prefer to go around in the dark to her nest, and fowls not having any business there, will not go unless evil inclined.

It is quite a protection against egg-eating. The nests, roosts and platform can be taken out at any time in a few minutes, when desired to clean. When a little larger house is wanted, I would offer the following as a good plan :



It is a little house which is well calculated for a city lot. If built of matched boards or of surfaced boards, and battened and painted, will make a pretty house. It can be made eight, ten or twelve feet long, and five to eight feet broad, according to taste and wants. It is sometimes desirable to cut up such small houses into quite small quarters—say for a cock and two or three hens, when the

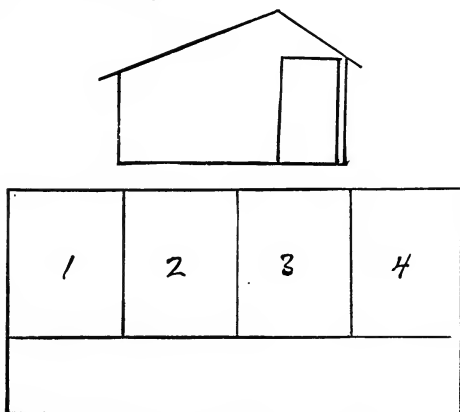
eggs of a particular mating are wanted—which can be easily done by lath partitions, giving each a yard on the outside by itself. If this house is made of rough hemlock, and the cracks not covered, it will be cold, and no ornament. The extra expense will well pay the man of taste. If rough boards are used, the water-lime paint will improve appearances, at small cost. (See recipes.) There must be pitch enough to the roof to turn the water readily. How to cover these small houses, so as to turn the water and be warm, has been quite a question with me. It has been difficult to get a house warm enough to preserve the combs of my Spanish and Leghorns, when the mercury was below zero. Matched and surfaced boards are used successfully, if painted with two coats of coal tar, on a hot day. I have succeeded best by first covering the building with dry, rough hemlock boards, running up and down; the roof at an angle of forty-five degrees. Over this I put the tarred paper, and over the cracks nail lath, and over all I put a coat of coal tar. This will need a coat of tar once in two or three years. Over the sides of the rough board house I put one or two thicknesses of newspaper, and over this I put another thickness of half-inch boards. In this way I have carried my high-combed fowls through the coldest winters, without a fire, and not had the combs touched. The house has a southern exposure, with double lights of glass. (An illustration of this house is given on page 19 of *POULTRY FOR PLEASURE AND POULTRY FOR PROFIT*.) Fowls will stand quite cold weather, if the air is still, but a cold wind is hard on them. During very cold, snowy and wet weather, I shut the little doors leading to the yards. Fowls take great hurt out at such times. Ventilation in the ends, near the peak. The drawing is faulty: it does not show it.

PLANS FOR LARGE HOUSES.

Where so much expense is involved as in the building of a large house, it is best to move quite slowly. If a person is positive he will always want the house for poultry and nothing else, it will be well enough to build with nothing else in view. But there are many who have, with full confidence, bought and built extensively, bred for one or two years, and then given up all. In these cases, where their houses were built not allowing for any change, many of the buildings have been unsuitable for anything else: hence it is that I suggest that buildings should be constructed in such a manner that they will answer for other purposes than poultry keeping. I like the plan of putting the house in such a position, and so built, that it will answer for a barn or stable. A little building, 16 x 20 feet, can be nicely arranged for eight flocks of fowls, and would be a

convenient building in almost any place. This would allow for a four-foot hall-way running the length of the building, with four small apartments in each side—quite small, but will allow for a cock and eight or ten hens. A building 20 x 25 or 30 would be better still. I am often asked the cost of buildings of different sizes and shapes. This I am unable to give, as the price of lumber in some localities would be double what it would be in others, and help is often much higher.

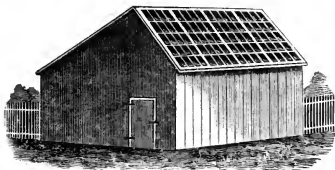
When it is desired to build a permanent house, with accommodations for four or more flocks, I would give the following, as simple, cheap, and easily managed :



The several apartments will accommodate eight or twelve hens each. Ground plan, 12 x 24 feet ; partition running lengthwise four feet from the higher side, cutting the building into two sections—4 x 24 feet, and 8 x 24 feet. Cut the larger up into smaller apartments, 6 x 8 feet. One broad side (the lower preferred) should face the south, with windows. If the broad side is to the front, the partition between rooms Nos. 1 and 2 can extend across the entry way. So can the partition between Nos. 3 and 4. If the end is to the front, the door will be in the end, as in the diagram. There are many different plans which are good. Let the proprietor use his own pencil, and draw plans to suit his own tastes, demands and

means. It is understood where we keep fowls, as in the large house, it will be necessary to give them more care to keep them healthy than as though there was only one flock on the grounds. Of course a separate yard is demanded for each apartment. The partitions of houses and yards should be tight for two or three feet from the ground, to prevent the cocks fighting between yards. A good paint, especially for a rough house, is my water-lime paint. (See recipes.)

I am indebted to the *Country Gentleman* for the accompanying cut of house, with part sash roof. This house should face the south, to get full benefit of the glass. This makes a very light house, and when the sun shines at all, it makes a warm house. If the sash could not be lifted, on very warm days, it would make the building much too warm.

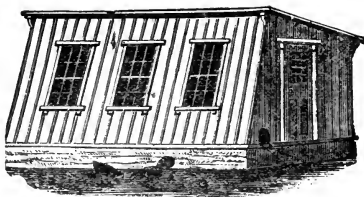


The dimensions are: Length in front, 11 feet; depth, 12 feet; from bottom of sill to top of plate, 4 feet 3 inches; from bottom of sill to peak of roof, 9 feet 7 inches; long rafters, 10 feet 4½ inches; short rafters, 5 feet 2 inches. The sash are so arranged that they can be drawn down from the top to give ventilation.

Two perches run the length of the building, in the rear, and are raised about 2½ feet from the floor. Under the perches is a scaffold, to catch the droppings. Beneath the scaffold are arranged the nest-boxes, for which purpose loose boxes are used. A strip of board 4 inches wide is tacked on to the sill at the ends of the house, and here the feed is placed. The house is large enough to accommodate from thirty to fifty fowls. It was built at a cost of \$42.00, including window-sash and painting. The sides are of matched boards; the roof shingles.

It will be seen that the drawing is faulty. Either the height from bottom of sill to top of plate is seven or eight feet, instead of four feet three inches, or the door in the drawing is too small.

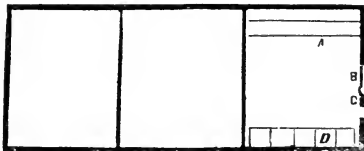
Geo. K. Hawley, of Glen's Falls, N. Y., a breeder of American Dominiques, furnishes the accompanying cut of a house on his grounds, with the following description:



A PRACTICAL POULTRY HOUSE.

"The above cut is the representation of a building 20 feet long, 8 feet wide on the bottom, 6 feet high in the rear, $6\frac{1}{2}$ feet in roof. It is built of matched and dressed lumber (pine the best) for the outside, battened with strips and well painted. The frame is 3 by 4 joist, lathed and filled in with sawdust on all sides and roof, then plastered. Gravel bottom. Three windows, twelve lights 9 by 13, both sash movable; and a light frame inside, one-half the size of the window, prevents the escape of the fowls when the sash are raised, or dropped. The building may be divided into three comfortable coops, with lattice partitions, and two lengths of roosts, under which is a platform to catch the droppings, thereby insuring cleanliness. The nests are 'secret,' built on the ground under the windows. A window in the door regulates the temperature.

"This house has proved a success during a severe winter, the thermometer indicating only three degrees below freezing, when it was twenty-six below zero outside.



GROUND PLAN.

A—Roosts. B—Door. C—Entrance for Fowls. D—Secret Nests."

I think the house can be made nearly as warm by double boarding and one or two thicknesses of paper between, besides furnishing no place for rats.

HOUSE FOR LAYING AND SITTING HENS.

Where several hens are sitting at the same time, it is well to

have each nest connected with a covered runway, in which food and water may be placed for the hen, and which will prevent her returning to the wrong nest, or being disturbed by the attempts

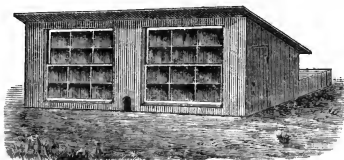


FIGURE 1.

of other hens to lay to her. Such an arrangement is shown in figures 1 and 2, and which represent the plan of a sitting-house contrived by a correspondent of *Farm and Fireside*.

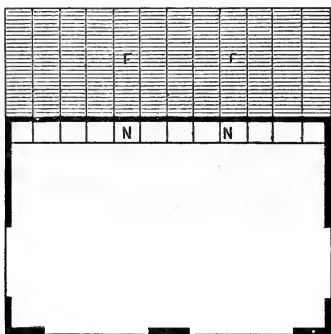


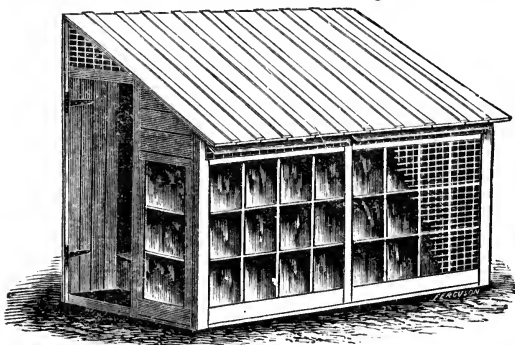
FIGURE 2.

"This house is made for fifty hens, and is twelve feet long from east to west, by eight feet wide from north to south. There are doors at the east and west ends, and sliding glass windows, six by eight feet in size, on the south side. Boards, six feet long by one foot wide, are set on edge under the north side in such a way as to form boxes one foot square inside the house, and one foot by five feet outside. The inside boxes are used for laying and hatching, and are connected by doors with the outside boxes, which are used for feed boxes, and are covered with lath nailed so close together

that the young chicks cannot get out. The inside boxes have lids, which are shut down when the hen is set, and the doors to the outside box is then opened. Feed, water, gravel, etc., are placed in this outside box, and the hen will thus be able to help herself without being interfered with by other hens."

I think an improvement on the plan would be to allow only eight nests and eight runs, instead of twelve.

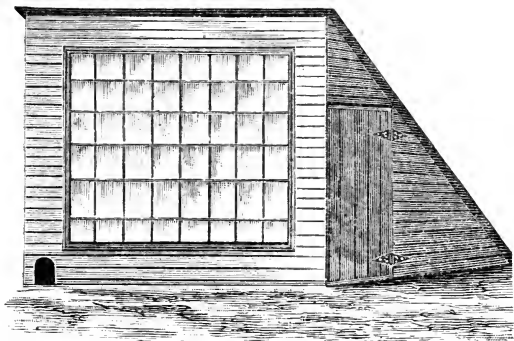
It is often that the lay of the yards is best adapted to a house with the higher side toward the north. In that case the windows will be best on the lower side. Here is a drawing of such a house :



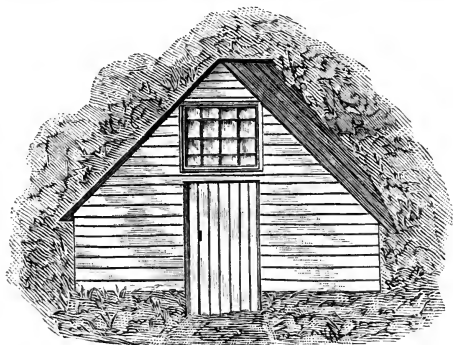
It will do very well as a lean-to on the south side of a barn or shed. In that case it ought to make a very warm house. In the drawing is wire netting over the glass, to protect it. Over the sash and over the doors are ventilators, which should be regulated according to the weather. On the south side, just in front of the windows, is the best place for a dust-bath for the hens. The house has no floor, and the dry earth and ashes make a good place for the hens to dust themselves. The nests are on the north side, under a little platform, over which are the roosts. The yards are on either side, as most convenient.

The first cut on next page is of a cheap house, well calculated for very cold climates. If we can have the roosts low, and in the back part of the building, and the roof partly covered with straw, or even dirt, it will make a good winter house. It should face the south, if possible. Next, an easterly front is most desirable.

But a much warmer house is the little cottage in the hill.



These two cuts were made especially for this edition, and show two houses suitable for our cold, northern climate. They can be



made of either stone, brick, boards or logs, and at very little expense. If of stones or logs, it will be necessary to make the door and window frames, and set them, and fill in round them; fill in the chinks with mud or mortar.

The temperature of this style of house can be kept so that our high-combed fowls will come through the severest winters with combs untouched. As quarters for winter layers such a little house

is number one. On warm and sunny days the fowls can be allowed a run outside, to pick grass and fine gravel. Hens so accommodated should lay well during the most of the winter, and at a great saving of feed.

HOUSES WARMED BY FIRE.

A Dutchman is charged with once saying, that he did not see the use of a moon on light nights. On dark nights is when we want a moon. As some say, let the hen rest in summer, but lay in winter, when eggs are high; and they try to turn winter into summer, by providing a fire for their poultry houses. In this way they hope to obtain eggs when most needed, but I do not hear of success in this attempted transformation. If left to themselves, with warmly built houses, they will be prepared for the cold weather, and come through all right; but provided with fire, they will become very tender, and at a chance exposure to severe weather, will come down with colds, resulting in roup, and will present a sickly appearance by March, with no good prospects for summer business.

Instead of a house warmed by fire, I think, with a tight building, and double lights of glass on south side, with sawdust, straw or leaves on the floor, it is possible to get quite a number of eggs during the winter months, and at the same time not render the fowls so extremely tender as to endanger their lives; and I would here say, fowls can not be taken from comfortable quarters and put in a more exposed house without danger. During the most severe weather, when the mercury would drop below zero outside, I think a little fire, to keep the temperature in the neighborhood of freezing, would be well.

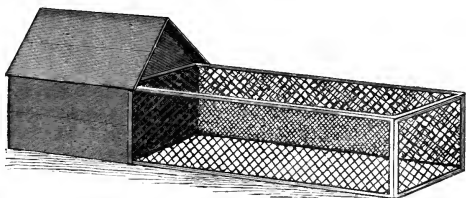
YARDS.

Suitable runs for fowls outside of the building are as essential as the building itself. These should be dry, as roomy as possible, and with some kind of a shade,—either of trees, bushes, or a covered run, if nothing more than boards laid up against the fence, under which fowls can get out of the hot rays of the sun. It is a good thing to have the ground under the shade well spaded up, with ashes mixed in, as the fowls like to roll in it. It is also well to spade up in the yards often, and so give the fowls fresh earth.

For Brahmas and Cochins, a picket fence four feet high is sufficient. For Leghorns, Spanish, Hamburg and Games, the fence should be eight feet high, and then it may be necessary to clip the flight feathers of one wing; place the pickets not over one and a half inches apart. It is often that we want to shut the chickens, when quite small, in the yards. For ten fowls, a space equal to

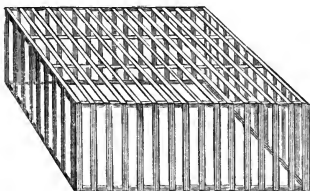
10x20 feet will answer, where they can have a grass run besides. No suggestions as to shape are needed ; we must conform to our grounds. Water-lime paint improves appearances. (See recipes.)

Besides this yard, to which fowls have access at all times, a grass run is quite a help, but it is not essential if we will supply them otherwise. Where we can have a plat of grass, into which we can open a yard, long enough each day for the fowls to pick, we are very fortunate. One grass yard, if large enough, will answer for several flocks, by letting out one at a time.



COVERED RUNS,

for chickens, young turkeys, ducks and geese, are very convenient in many respects: to guard against cats and rats, and where larger fowls would rob the little ones of their food, and in which to confine young turkeys while the dews are on, or the grass is wet. They are easily made of lath or wire netting, and attached to the coop in which the hen is confined. A convenient size is eighteen inches high, four feet wide, and eight feet long. It is easily handled. It is a good plan to have such a place for feeding the chickens when they run at large.



The slats should then be far enough apart to let them go in and out when they choose, but not far enough apart to admit larger chickens and fowls.

COOPS,

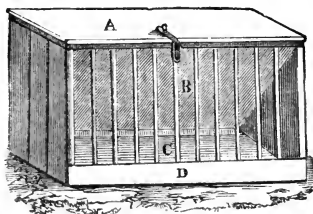
in which are confined the old hens, while the chicks run at large, though demanding so little attention generally, are of some importance to the chicks. Some are made of boxes or barrels, with sticks driven down in front ; but the general plan is to place two boards in the shape of the letter A, and nail slats across them on both sides. It is not very bad in mid-summer, but in early spring it is too open.



They should be boarded tight behind, and slats in front, running up and down, just wide enough to keep the hens confined. (See cut.) I think crooked backs are often caused by chicks squeezing through the horizontal slats of their coop. The chicks should be kept warm in the spring.

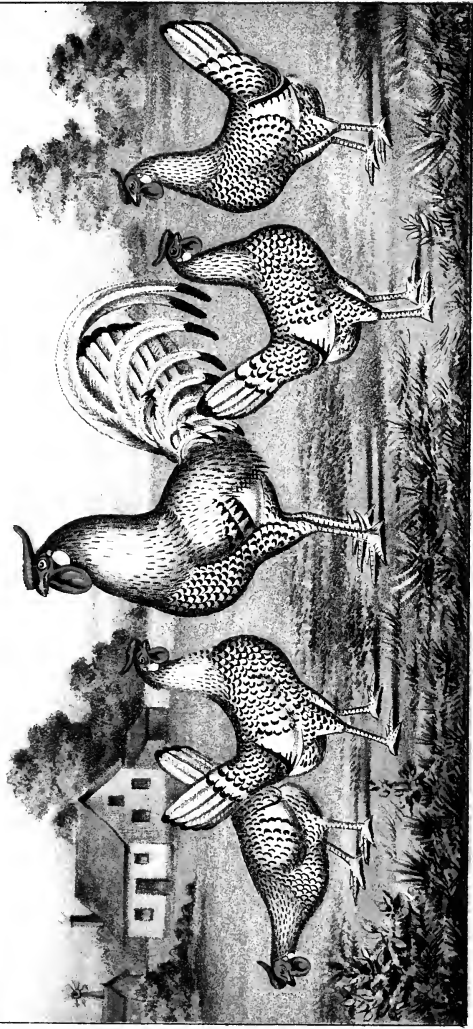
A CHEAP FEEDING-HOPPER.

“ Here is a plan for a feeding-hopper, which can be made out of old candle-boxes, for the want of a better thing. Take off the lid and one side ; let the ends, bottom and one side remain ; cut a small strip off one end of the lid, so that it will slip in between the ends of the box, placing the lower edge one and a half inches from the side, and an inch from the bottom ; the other edge of the lid is to reach the top and outside corners of the ends, thus forming



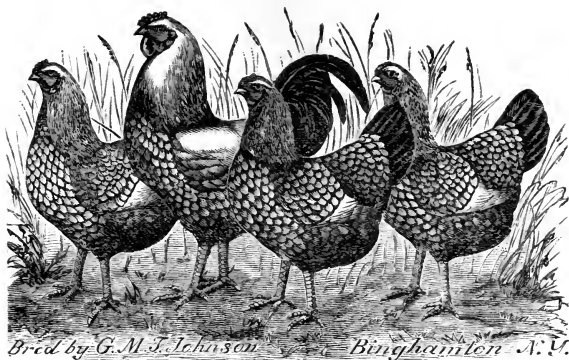
a deep angular box, with aperture at the bottom. As shown in the cut, the lid forms the slanting side B ; C forms the trough where the corn will descend down to it, when put into the angular box ; then put hinges on the lid A ; the open part of the hopper has a row (D) of slats two inches apart ; these slats should be brought to the edge of the box, so that the fowls can just reach the bottom of the angle ; the corn falls down as fast as the fowls pick it away.”

—*Poultry Monthly.*



BRED BY G.M.T. JOHNSON, BINGHAMTON, N.Y.



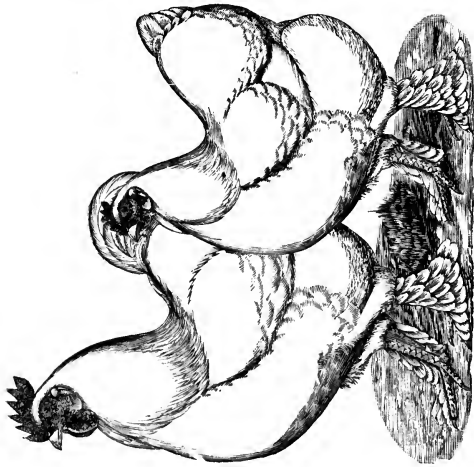


GROUP OF WYANDOTTE FOWLS.

PART II.

GENERAL CARE FOR HENS.

When fowls have full range of a farm, they will do well with little extra care. Give them clean, warm shelters and plenty to eat, and we will get eggs, and our stock will be healthy. It will do to keep as many as fifty, if ample and suitable provisions are made for the fowls to lay and roost without quarreling, and we do not care to breed from any particular birds. But, as a general thing, a cock and ten hens are enough for one locality. We can then, with rare exceptions, depend upon the fertility of the eggs. Chickens properly cared for, will be healthy and vigorous, grow faster, and come nearer perfection. Many of the ills that the hen is heir to, her diseases and deformities, come, to a greater extent than is generally supposed, directly or indirectly from being crowded; and this is probably the cause of more failures in the poultry business than all others together. When confined in yards, this is still more emphatically the case. It will be essential to provide the necessities, comforts and luxuries of hen life. If for breeding, the fowls should not be crowded to lay during the winter. They



WHITE COCHINS.



BLACK COCHINS.

should be fed with whole grain—no meal or warm feed—and little meat, but more when saving the eggs for setting. The fowls will then be more mature, and in vigorous, healthy condition. They will impart this vigor and health to their chicks, and so we will get our pay for previous loss of eggs. They must have warm, dry and clean quarters. By *warm*, I mean free from sudden changes of weather, and protected from the winds and draughts. I wish to give the force of a full chapter to this one line—

Protect the fowls from inclement weather!!

During very cold, rainy or snowy weather, the fowls should be shut in their houses, and not allowed out till the weather is better, if they are shut up a full week. Keep strictly on guard against

VERMIN.

To the careless and negligent they are a great pest, and often so to the careful man. The only safe way is to begin the fight before they make their appearance. A great help, and almost a sure prevention, is a good

DUST BATH.

In a broad, shallow box—in the sun, if possible—put coal ashes, land plaster, road dust, or any dry earth, with some wood ashes mixed in, if convenient,—if unleached, not over one-sixth; if leached, not over one-fourth. A pound of powdered sulphur is a great addition. If convenient, sift the coal ashes where the fowls can pick out the coal, and roll in the ashes. Charcoal is excellent for them. Throw down a bushel where they can go to it and eat whenever they wish. In the winter, sand or gravel must be provided, where the hens do not have free run to an ash-heap. In summer, spade up the ground often; fresh earth is quite essential.

NESTS.

Sawdust, a sod or soil, with fine rowen spread over, are good. My objection to hay is, that it damages the manure by scattering grass seed. Sprinkle sulphur in the nests when first made, and every two weeks afterward,—a teaspoonful to a nest. Tansy in the nest—the weed or the tincture of it—is good to keep off vermin.

THE FEED

depends much upon the time of year; whether confined or not; the variety of fowls; and the object to be obtained. To be healthy, they should have green food. If possible, give them a grass-run in summer. If it cannot be given, extra care and attention must be devoted to them to supply the loss. In that case, and in winter, give them some cabbage, turnips, beets, carrots or onions, chopped

fine ; or a pumpkin cut in two, and let them pick it. Too much onions will cause the eggs to taste of them, but for growing chickens and breeding fowls they are excellent—very appetizing. If farmers would give their young turkeys more chopped onions, and less raw meal, they would have more to sell on Christmas. Indian corn makes the best staple food—more in winter, and less in summer—in form of meal, with wheat middlings or bran, scalded, in the morning, and in the kernel at night. Corn is very heating and fattening. I would not give over half in the summer. Wheat, oats or buckwheat make the best summer feed. Give to Brahmas and Cochins less corn, in proportion, than to Hamburgs, Polands, Leghorns or Spanish, as they tend more to fat. The morning meal should consist of ground feed, scalded and wet up thick, with a little salt,—a teaspoonful to three quarts of feed. At noon give light feeding of grain, and at night all they will run after. Do not overfeed, but give enough. I believe I have never suffered from feeding the smaller varieties of fowls all they will eat of whole grain. The Brahmas and Cochins, if over two years old, are disposed to put on fat, especially if confined in yards ; and can be overfed with ground feed or corn. They die suddenly—perhaps on the roost or nest. In summer, fowls running at large should not be given so much but that they will forage all day, if the weather is suitable. For a change—and only for a change—give them cooked potatoes, but they make very poor feed for winter,—too cold. Give variety. Fowls have a great appetite for meat, and should have it, in some shape, especially when laying. For want of it they often get the very bad habit of eating their eggs, or pulling feathers and eating them. Give meat in small and regular quantities. Scatter well in a clean place, so all can get some. Whenever it happens that hens get fat and lazy, and, although well provided for laying, won't lay, it sometimes does them good to warm them up a little with cayenne pepper, or egg food. Give them, in their warm feed, one teaspoonful of pepper to three quarts of feed. (See recipe for condition powders. This recipe is selling, through the poultry papers, for fifty cents, and is highly recommended.) Musty grain or musty feed of any kind should be strongly guarded against. It is often the case that a person will feed such right along, and not know it. He will lose a fowl every few days, but will lay it to his ill luck ; whereas, if he would smell of his hen feed once in a while, he would see he could lay it to something else. I do not believe the value of

GROUND OYSTER SHELLS

is generally known. I consider them a very good egg food. The

shells are ground, now-a-days, expressly for hens. Keep a quantity by them all of the time. They are very fond of them. I believe they not only furnish the best of shell timber, but stir up the egg organs, and tend to general health. Powdered or ground bone is excellent. I have found it but little trouble to provide each yard with two large stones and a bushel of shells, bones and broken crockery, and about once a week go around and pound up what they want.

WATER.

Fowls want to drink a little and often, and that which is clean. If forced to it, they will drink almost anything. Many fowls are most shamefully abused in this respect. Shut up in coops without water, they run around in the blazing sun; and when they get anything to drink, they gorge themselves. Diseases are often brought on in this way. A sudden change in the feed or general management is very bad. Fowls will stand a change from good to ill, better than a change from poor to good. It is death in many cases to give fowls full run, or good feed, which have previously been confined on bad, hard fare.

FEATHER EATING.

This is a very vexing habit or disease to get along with. A flock of fowls with fine plumage will often, in a few days, be stripped of small feathers. Some give one cause, and some another; I have seen more or less of it. I do not find fowls with a large grass-run and meat diet, to pull feathers; and those in the habit of it, give it up when let out. I have observed that fowls when not laying will not do it much, but when they commence to lay, it is reasonable enough that they experience a demand for egg-forming material, and must have it; and again, they have nothing else to do. Give them wide range, where they can scratch and eat grass; or scatter their grain among the sawdust and leaves of their pens, so they will have to scratch for it. Keep them busy at something better.

"The feather-eater is after the salt contained in the blood at the end of the quill. Birds fed with salt-seasoned food are never feather-eaters."—*Useful Companion*.

The following letter I think right to the point, as it contains very practical suggestions on the subject of feather-eating:

GRAFTON, Mass., Jan. 2, 1884.

G. M. T. Johnson, Binghamton, N. Y.:

DEAR SIR:—I received the book you sent me all right, and find it just what I was in need of. It is full of useful information for

all persons who are keeping poultry for their own use, or raising it for market. I find it treats in full on all points of raising, keeping and marketing poultry. I consider the recipes are full worth the price of the book. I hope you may have a large sale of this edition, and then get up the fourth edition, and put in my recipe for curing hens of eating feathers. It is this: *Give them all the salt pork that they will eat.* It will not hurt them, but will stop their eating feathers. The way to feed it to them, is to take a large piece and put it in a rack, where they cannot get it into the dirt, and let them eat all they will. All that there is bad about it is—*finding the money to buy the pork, at fourteen cents a pound!* I find it a sure cure for feather-eating. I would not take twice the cost of my book if I could not get another.

If this should be of any use to you, you may use it.

Yours, truly,

M. P. S.

EGG EATING.

Properly this is a habit generally brought on by accident. The hen lays a soft-shelled egg, or drops one in the yard, and it is accidentally broken, and the hens eat it. In this way they get to breaking sound eggs and eating them. Fowls closely confined often will do it, which with good range will stop. They too often learn the trick by eating the shells thrown to them. The egg-shells should be thoroughly crushed before given to the fowls. The only remedy is to take away the hen, or she will teach the whole flock to do the same. In general, the shortest and best way is to kill her. If she is a valuable one for breeding, and we do not wish to kill her, make her a nest of cloth sacking, or the like, drawn over a box. Let the cloth sag, of course, in the middle. Cut a slit in the bottom of the nest; sew or tie a false egg in the nest for a nest-egg; under the box put straw, or something soft, for the egg to drop on, and as soon as laid, it will roll down through the hole, and is safe; but as a general thing where fowls have full run, they will not be troublesome in that way.

CARE FOR SITTING HENS AND EGGS.

Eggs designed for hatching should be collected as soon as laid, especially in cold weather. They should be kept on soft material, no one resting on another, and turned every day. Some say, large end down; and some say, small end down. The hen lays them on the side, and I consider her good authority. They can be transported any distance and hatched, if packed carefully, and not too long on the way,—often across the ocean, or from Boston to San

Francisco. (See letter at end of this chapter.) Eggs will keep from three to five weeks, and hatch. Much depends on the vitality of the parent stock. Fresh eggs hatch quicker than old ones, and make stronger chickens. Brahmas and Cochins make kind mothers, but are generally considered too heavy. Games make good mothers. They are light on their eggs, attentive to business, and take best of care of their chicks. If we wish to move the hen, we must do it carefully, at night. Let her sit a few days on common eggs, till she gets well started, when it will do to give her high-priced ones. Sprinkle the hen and eggs with sulphur two or three times during incubation, but not for the last three days. Have feed, drink, gravel and dust-bath handy. I often set hens in by-places in the out-yard, where they can have full range when off the nest. For the first few days I keep a coop over them. After that I raise it so they can go out and in, but I keep an eye on them. I tack a piece of paper over each nest, telling the variety, and when the brood comes off. During incubation the eggs should be wet often, especially if the weather is dry,—perhaps twice a week, excepting when the nest is on the ground. Sprinkle them thoroughly on the day before the brood comes off, and we will not have many die in the shell. In many cases the inside shell gets too dry and hard, and the little chicks can not get out. Notice the hen that steals her nest. She will leave it and seek food in the morning, when the grass is wet, and will go back with feathers dripping with water. Should the nest get fouled in any way, take the hen off carefully, and if necessary, wash her; wash the eggs in blood-warm water; clean out the nest; make a new one; put back eggs and hen, and the machine is in running order again. We do not try to help the chickens out of the shell. It generally kills them. As a general thing, it is best not to disturb the hen at all when hatching. She can attend to her business better alone than as though she had a clerk. If it is desired to raise many chickens, and the weather is warm enough, we set two hens at the same time; give all the chicks to one hen, and give the other a new lot of eggs. See that she is healthy, free from vermin, and the nest fresh and clean. Do not give one hen so many chickens that she cannot cover them, if the weather is cold.

HOW FAR CAN EGGS BE TRANSPORTED AND HATCH?

I have often been asked this question, and have taken some pains to know, as near as possible, what are the conditions of a hatch after long transportation. During the past ten years I have shipped eggs to almost every State in the Union, and different parts

of Canada, and have received reports of hatch ; also by comparing with other breeders, I have found to my satisfaction, at the present time : 1st, That early laid eggs, of February and March, are not as sure as later,—say April, May and June. 2d, I have found that eggs from our larger fowls, the Cochins, Brahmas and Plymouth Rocks are more uncertain than of the smaller varieties, Leghorns, Games, and others. Especially are they uncertain if the cock be a heavy, logy fellow ; and I think these facts, if they are facts, are due to the inaction of the cock. I have observed that early in the spring, before fowls run out much, cocks are quite stupid, but later, as soon as the doors are open, and the fowls have a run out in the sunshine, their lordships wake up to life.

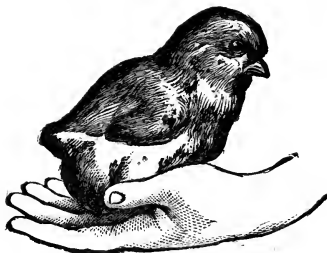
There is but little trouble with our lighter varieties, if they are ordinarily well mated ; and with our large fowls, if we would send eggs to a distance, we should put only six or seven females with a young cock, and then give them out-door run together. If not desiring a special mating, I would change the cock every few days. If I am mistaken in my observations, I would be pleased to be set right. The following extract from a letter to a poultry paper, on the subject, will show that distance and eighteen days' time do not make much difference, where eggs of the small varieties are all right at home, and well packed :

“On the 26th of April, 1881, I received of Mr. JOHNSON, of Binghamton, N. Y., three settings (thirty-nine) Brown Leghorn eggs. The eggs were shipped at Binghamton, on the 8th of April. I received them on the 26th day of the same month, after a voyage of eighteen days, and a distance of about 4,000 miles—including land and water. On the 18th of May, 1881, my eggs hatched. One hen brought out eleven chickens from thirteen eggs. Out of thirty-nine eggs I raised twenty-three chickens,—I believe as fine birds as ever were hatched. Out of the twenty-three, I had ten pullets. On the 20th of October they began laying, and have continued ever since, each one of them, at the rate of five eggs a week. This last remark will, I think, suggest to you their constitution and health. I feel quite certain that eggs obtained from No. 1 stock, thoroughly packed, with non-conducting material, and otherwise properly attended to, could safely be sent to New Zealand, either from San Francisco or New York, by mail steamer.

Cowichan, B. C.

WM. MCKINNON.”

These eggs went by express to San Francisco, Cal., a distance of 3,000 miles ; thence by express to Victoria, Vancouver's Island—800 miles ; thence forty miles to Cowichan, British Columbia.



CARE FOR CHICKENS.

What is the cause of so great mortality among young chickens and turkeys? It is the great complaint that so great per cent of them die before grown. The difference in the old hen's way and our way of handling the young is very noticeable. If a careful mother, she will remain on her nest till the grass is dry, if it is until twelve o'clock; especially is this the case with the turkey. Then the troop will start off. She will find—now a bug, now a piece of grain or seed, next a worm; so that in the brood there will be long intervals between bits of food for each chick. The crop then contains a great variety, and only a small amount. We will stir the old hen up to let the chickens out for breakfast early, while it is yet chilly, and the grass is wet. We then give them all they will eat of raw corn meal and water, which must swell, and often gets sour before it passes from the crop. All this is very wrong. The great loss of young turkeys says so. As a rule, it is best to try to deal with the chicks as the old hen or turkey does. Again: Our yards, in many cases, are infected with the germs of gapes and cholera, having been used a number of years for the rearing of chickens. (See Chapter on Gapes and Cholera.)

As a general rule, I would say: Do not disturb the chickens for the first twenty-four hours, if the hen will stay on the nest. They will not take any hurt if they do not eat for the first forty-eight. The most they need is brooding. At this period they get more strength from it than from food. As a prevention of vermin, rub a little fresh grease of any kind—size of a pea—on the top of the chickens' heads or backs. Do not put sulphur on the hen or chicks. It will get into their eyes and poison them. For the first week, stale bread soaked in milk or water, or hard-boiled eggs, chopped

fine, is best. Feed onions, chopped fine, often, and let there be handy some ground oyster shells or pieces of crockery pounded fine. Indian meal, when uncooked, is bad for young chickens. It swells and hardens in their crops. Indian pudding, seasoned with black pepper, is good for first few weeks. Do not rout the little chickens out in the morning before they wish to come, or let them out in the wet, but feed little and often, especially before they "retire." Do not oblige the little chicks to stand out in the cold waiting for something to eat. As soon as they will eat it, I consider cracked corn or wheat better for chickens than meal. They do not waste as much, it does not get sour, and we can have it near by them, so that we are not obliged to feed so often. One common trouble is, that people will feed little chickens in the morning, and not again till ten o'clock. Then the little chick eats too much,—starved one hour, and stuffed the next. By this means the chickens become stunted or otherwise diseased. Keep fresh water near, in dishes so shallow that they will not drown. Do not set the coop on the cold and damp ground. If early in the season, put the coop in a barn or shed with a floor to it. The little chicks need to be kept warm and dry. When they stand on the cold ground all night, they are likely to be sick the next day, and soon the whole brood will be dragging their wings on the ground and peeping piteously, for a few days, when they will "shuffle off this mortal coil!" Do not let them out-doors in the rain. It is a mistake to put straw in the coop. The little chicks get their feet entangled, and the hen treads on them. Fine coal ashes are good in a coop. Later in the season, after the ground gets dry and warm, put the coop on soft ground, if it is convenient, and sprinkle powdered sulphur over the ground. Change the position often.

It is not best to take the hen away from the chicks too early. As long as they will brood, let them. Warmth, good brooding and protection from the weather, are better for chicks than good food—and that is very essential. Many a promising lot is ruined by getting chilled at night. As soon as the hen is taken away, the chicks must be protected from the cold. It is a good plan to put the hen and chickens in the house where you wish them to stay after they are weaned. They will run out from there, and when the hen leaves them they will huddle together, and so keep warm. Do not furnish them roosts. Oblige them to sit on the floor till nearly grown. Crooked breast-bones are often caused by roosting too young.

A great mistake, often made, is the trying to raise too many chickens on the same range of ground. Many or few, they will wander about so far away from the coop, and no farther.. The

ground over which they run will furnish, spontaneously, about so much in the form of bugs and worms, which are so conducive to the health of the chicks. If this is divided among a large flock, each will get only a small portion; the larger ones will tread on the smaller, and the chicks will grow slowly, and be inferior.

It is sometimes well to let the hen have full range, and sometimes not well. She will pick up many little luxuries for her chicks, but if she is a roamy, uneasy body, she will worry them to death by dragging them around. As soon as possible, cull out all inferior and defective ones, thus giving their room to others. Select such fowls as are wanted for keeping over, but a person must be well experienced to be able to judge before nearly grown. Many an awkward, inferior-looking chick develops into a fine bird of his kind: especially is this the case with Brahmas and Cochins. Allow two or three extra in case of accident or death. As soon as the young cockerels begin to worry the hens and pullets, it is best to put them in a yard by themselves. For the larger varieties—Brahmas and Cochins—it is best to set early,—say in March, as it takes so much longer for the chicks to mature. March and April chicks do better than later ones. They are large enough, when the ground opens, to make war on bugs and worms, which are then so plenty, and so conducive to the growth of the chicks. They get well feathered out by the time nights are cold in the fall. They are salable in market in July, when prices are high. May and June chickens do well, but August and September chickens are, generally speaking, too late. Perhaps this chapter will explain why it is not profitable to raise fowls in large numbers on one place.

TO MAKE HENS LAY.

Many seem to think there should be something out of the ordinary line of management, when we wish to make hens lay, whereas they need nothing that has not been given under other heads. They should be perfectly healthy, and well provided with good, rich food, and clean drink,—say a warm breakfast and dinner of meal and wheat middlings or buckwheat middlings. This should be scalded. Egg food or cayenne pepper,—a teaspoon even full to a quart of feed, well stirred in, will help. A mixture of whole grain, corn, oats, buckwheat, &c., should be given them at night. With these the fowls should have fresh meat in moderate quantities, and green food,—if not grass, then cabbage, potatoes, etc., chopped; and gravel, sand, oyster shells and broken crockery. If warmly housed, clean and healthy young fowls ought to lay with this treatment.

TO KEEP HENS FROM LAYING.

This sounds like a very singular subject. It is, however, sometimes necessary to make a little extra work to keep fowls in check during molting, and at a time unseasonable for breeding, wishing to reserve their strength to a more opportune season.

Give no soft, warm feed ; whole grain entirely. Provide them no good places for nests ; break them up if they make any. Hens will not lay much under these circumstances. When the right time comes, give them nests ; make things look tidy and inviting ; give them some luxuries, and they will soon be down to business.

TO STOP HENS SITTING.

Confine them in an elevated coop, with slat bottom, where they will be obliged to roost, and cannot brood. Feed very sparingly of meal, strong with egg food or cayenne pepper. Light feeding till she stops clucking ; or, if not particular as to what cock she runs with, a good plan is to put a vigorous cockerel in a yard alone, where there is no place for a hen to sit, and when we wish to break up a sitting hen, put her in with him. This yard might be called the Reformatory.

TO INDUCE HENS TO SIT.

It is a very uncommon state of things on the farm, when the hens forget their time to sit. Some of the smaller breeds, however, seem to have lost their calendar, and require special inducements to stop laying and commence sitting. By furnishing good nests, where they are undisturbed, and leaving their eggs in their nests, they will soon take to them. They must not be disturbed much, or they will leave them. I have in this way obtained sitters from Leghorns, and even Hamburgs, which have the reputation of never wanting to sit.

TO MARK FOWLS.

It is often very desirable to mark young chickens and turkeys of certain matings, and to be able to know one's own fowls in the fall. For that, a mark on the foot is about the best. The most approved plan is to punch a small hole in the web of the foot, between the toes, as soon as taken from the nest. One lot can have the mark between the first and second toe of right foot ; another lot, between certain other toes. Keep the account in a book. Another way is, to cut the nail off a certain toe. This is not very painful, and is an unmovable mark.

MATING FOWLS FOR BREEDING.

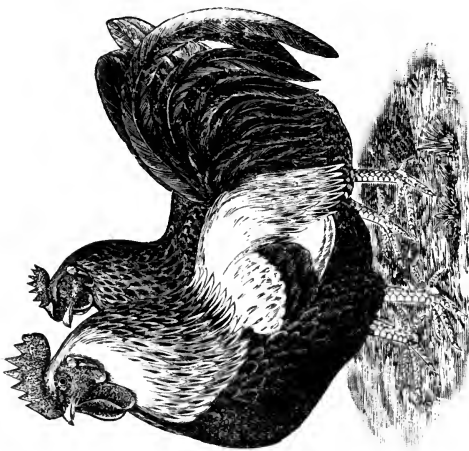
The quality of our next year's stock depends largely on the judgment of the persons who select the cocks and hens for their respective yards. There should be a positive idea of what is wanted, and with an understanding of what marks or characteristics a fowl will be likely to transmit to its chicks, we can make our selections.

If we are breeding for choice stock, and wish to get standard fowls, we should select, as near as possible, standard birds to begin with. It is hard breeding up. The tendency is down. A poor comb, bad plumage, discolored legs, and other bad marks of a cock or hen, will appear on the chicks. Perhaps a few will be well marked, but in the chicks of the next year the defects will likely appear. It is better to begin with a pair of birds whose parent stock for generations back are right, than to use a yard which are "off," and try to bring them up.

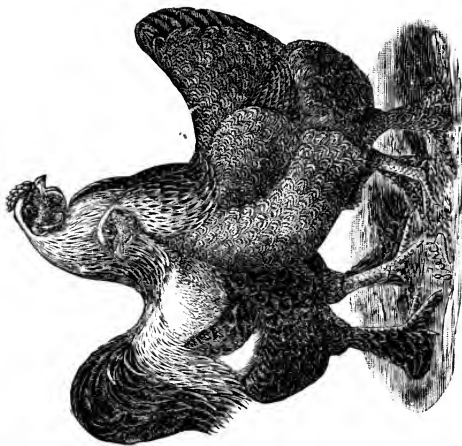
As to how many hens to let run with one cock, will depend on the vitality of the cock; and we must judge from actual observation in each individual case. Some will do better with fifteen hens than others will with five; but, as a general thing, six or eight hens are enough. The vitality of the chicks often depends on the vitality of the cock. If from a yard where there is an active cock and six or eight healthy hens, the chicks will be strong and vigorous; but from a yard of fifteen hens with one cock, many of the eggs will be worthless, and those that do hatch will be puny and die off, one after another, before they are grown.

One peculiarity of the Asiatic breeds is, that cocks, after the first year, sometimes get heavy and logy—probably by an excess of fat—and are not sure breeders longer than one year. Especially is this the case with the Partridge Cochins and Langshans. There has been a good deal of complaint of these varieties, in that one respect. I do not consider a cock safe after the first season. He may be all right, but the eggs must be given a trial before we can tell.

Some breeders claim that the cock, more than the hen, gives color and markings to the chicks, and the hen gives more size, form and useful qualities. The "in-and-in" system of breeding is strongly condemned. That is, mating a cock or hen with its own chicks; or mating fowls of one flock, old and young, promiscuously year after year. It will do for a few years, and is resorted to, at certain times, to bring out certain qualities of a particular bird, but as a general thing, it is denounced. The chicks are weaker, and more deformed. For health, we can bring in new blood occasionally, but it must be done carefully. We must see that the new



COLOR'D DORKING FOWLS.



DARK BRAHMA FOWLS.

blood is all right, and from a high family, before introducing it. The question is being discussed, pro and con, by good breeders on each side, whether hens that have been with cocks of other breeds, will ever breed true after. Some claim that her blood is tainted, and that she will be liable to throw feathers and marks of the foreign stock at any time. Others, and the majority, say it will make no difference after she has commenced a new litter of eggs. I have never observed any hurt in hens mixing up in the fall.

We are often asked, "How can I get a greater percentage of pullets in my hatchings?" It is noted among poultry breeders, that a large percentage of early hatched chickens are males, and late hatched chickens are females. It is a theory from our grandmothers down, that long eggs produce cockerels, and short eggs produce pullets. It may be well to try it. Some say, Hold the egg up to the light, and if the air-cell in the large end is in the point of the shell, it will hatch a cockerel, but if on one side, a pullet; but it is allowed by breeders generally that there is no sure way to tell.

MATING FOWLS FOR EGGS.

It is well understood that certain breeds of fowls are better adapted for eggs, and others for flesh. It is also well understood that cross-breeding often brings out the good qualities of both, to a greater or less extent; makes a stronger and more thrifty fowl. Generally speaking, the small breeds of fowls are better for eggs than the larger ones. The Spanish and the Leghorns are excellent layers; so are the Hamburgs, but they are rather tender. A cross between any of them will make good layers, and perhaps more hardy than either parent. Hamburg is good to cross with Dominique, Leghorn or Spanish fowls. A Dominique cock with Leghorn or Spanish fowls is excellent.

(See Chapter on Crossing, in the latter part of this book.)

MATING FOWLS FOR FLESH.

I think a cross between either of the Brahma varieties and any of the Cochins is good; or a Plymouth Rock cock with either Brahma or Cochin. The chicks are very thrifty, hardy, and grow to be of good size. In mating for flesh, it is not best to use a black or a blue legged fowl. As a general rule, I believe the yellow leg indicates hardiness; besides, the flesh of yellow-legged fowls appears best in market, and brings the best prices.

(These remarks do not apply to Turkeys. Any color departing from the deep bronze indicates weakness.)

A cross between the Leghorn and Light Brahma increases the size of the former, and laying qualities of the latter.

TURKEYS.

About the tenderest bird, when young is a turkey. A little dew or a few drops of rain applied externally, or a little uncooked food internally, will often kill it. When old, it will roost on the roof of a barn or in an old apple tree, in January, and glory in it. It requires a person of peculiar tact to raise turkeys: one who is willing to cook for them, and soak their feed, and nurse them. I think it is best to set the eggs under hens, as they are less inclined to wander. I would not disturb the hen till she is ready to come off, or allow any handling of the young turkeys. They require great care till they have put off their downy covering.

After twenty-four or thirty-six hours, it is best to remove them to a dry, warm place, and give them their first meal,—which should consist of bread crumbs soaked in milk. This, and hard-boiled eggs chopped fine, should make up their chief food for the first two weeks. Onions chopped fine will be good for them, and they relish them. I have succeeded best by feeding bread made of Indian meal and wheat middlings soaked in milk, until the turkey is six or eight weeks old. It does not harden or swell in their crops, and young turkeys are very fond of it. Uncooked meal is almost poisonous to them. It hardens and sours in their crops. Sour milk, especially the soft curd, is good for fowls of all ages. Let them have a supply of finely-pounded crockery or oyster shells always near them. Keep them from the damp. It is sure death! Put the coop on a dry, barren spot of ground or floor, in a board pen about two feet high. Do not allow the little turkeys outside of this, except in bright, clear weather, after the dew is off. When the turkey is six or eight weeks old, it is comparatively safe, but requires care till it "puts out the red." It is a very unwise plan to allow turkeys or any other fowls to roost out-of-doors in winter. To withstand the cold, they require more food for fuel. They are reduced in flesh, and will be later in the spring about laying. Besides, they sometimes make good dinners for parties with whom you have made no contract to furnish a fat turkey, and who never call to say, "Thank you!"

GEESE.

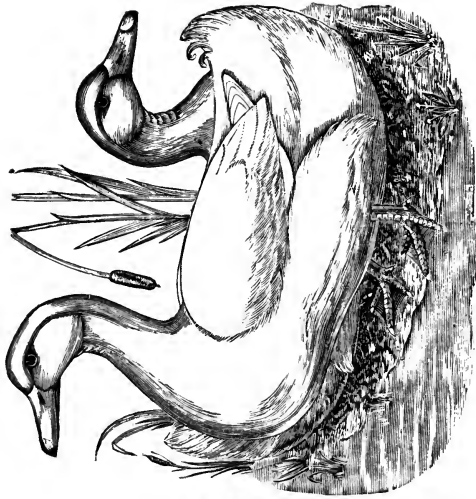
A rough shed with no floor, so that the geese can sit on the bare ground, perhaps littered with chaff or the like, is a suitable place for geese, which should be kept in small flocks, allowing a gander

to only three geese. Sometimes three are too many to insure fertility of eggs. Breeding geese are better after three or four years old. The gander should be older. Eggs from young geese do not hatch well. If well fed during the winter, geese will lay early in March from a half-dozen to a dozen eggs,—generally two or three litters in a season. They commonly lay at night, or if not watched will drop their eggs in the pasture or water,—three or four eggs a week. A goose sits thirty-one days. She should have a separate apartment where she will not be disturbed, as she is a very cross and unpleasant bird to handle if disturbed, and is liable to destroy her tender young.

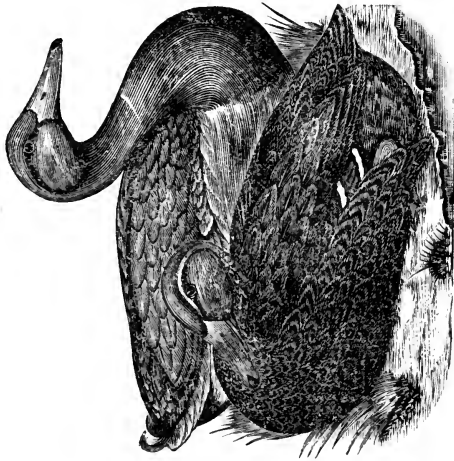
For the first two or three weeks after the goslings are hatched, they should be kept away from the water and the hot rays of the sun. Treat them as young turkeys, as they are very tender when young. They relish fresh, green grass or cabbage leaves chopped fine. They should not go in the water for swimming for the first ten days, and after that only for a short time, and when the water is warm. After the first month it will do to let them run in the pasture with the old birds. Geese must have a good grass range. They will not thrive in confinement. An old, worn-out pasture, with a stream running through it, or a wet, soggy meadow, is a paradise for geese, and they will want but little grain. They like water for swimming, but will get along with but little, if not convenient. When they are to be fattened for market, they should be comparatively confined for about three weeks, and fed high on cooked corn meal, and vegetables once in three days. Meat scraps chopped fine, and potatoes chopped fine, make a good change. Milk is excellent. When at their best, kill them, as they soon fall away. In winter, give the goose plenty of cabbage, chopped potatoes, apples or most any vegetables. They will do much better than if confined to grain, away from grass or any herbs.

DUCKS.

They will do well if treated the same as hens. It is not necessary that they should have water for swimming, although it helps them keep clean, and they enjoy it; but are easily reared in the back yard the same as chickens, and require about the same treatment when young. For breeding, a drake should not be allowed more than three or four ducks. They like to retire at night under an old shed or barn, but can be taught to come into a house with hens, if desired. They lay very early in the morning, generally, and wherever they stay at night. They are very careless about that.



PEKIN DUCKS.



ROUIN DUCKS.

If they are let out before laying, they will drop their eggs wherever they happen to be—on land or in the water. For that reason, it is not best to let them out early. It will sometimes be necessary to keep them in till eleven or twelve o'clock. They will not lay it up against us, as they have a very forgiving disposition, and will come into their apartments at night, if fed there. It is bad to have them get irregular habits, and for the owner not to know where they spend their nights. They are then a very easy prey to the evil one, in the shape of the fox, skunk, weasle, owl or snake. We must give them a place to hide when they lay. They are quite prolific, with good care, and many consider them more profitable than hens. They will stand more banging round than hens, and yet be very cheerful over it. For this reason, I think, many people like them. It is a better way to set the eggs under a hen. She will not lead them to the water, and they should not go there till six weeks old. They are apt to drown, are killed by snakes, or otherwise injured. After six weeks it will not hurt them, part of the time. It will do to pick them when their feathers are ripe, the same as geese; but we cannot expect many eggs during that time. It is not safe to let grown ducks run with little chickens, unless they have a good supply of meat, or are muzzled. They don't think much of the rights of others, and will eat chickens the same as they would frogs. A duck has no conscience.

TO PICK GEESE AND DUCKS.

In a close room, to prevent the feathers from flying. Draw a stocking over the head and neck, to prevent biting. Hold their wings tightly, to prevent their striking, as they give severe blows. Do not pick till the feathers are ripe. They will be clear and free from blood. While growing, the quill is filled with bloody substances, and is unfit for use, as there will be so much dead matter in the quill. Take all the small feathers. Do not pluck the large feathers that support the wings. Let them have plenty to eat, to keep up the supply, and do not pluck so late in the fall as to endanger the health and thrift of the fowls. Let them have a dry, warm place, after each picking, to keep them from the wet and cold.



PART III.

DISEASES.

Diseases are not natural, in the main, to the well-kept fowl. They are some of the accompaniments of domestication. In the first place, the fowl, by being confined or restrained at all, suffers to just the extent that its freedom is good for it. Again, while at liberty they are scattered over a large tract; in confinement they are brought together, and kept together, more or less. Here they suffer again. A fowl in confinement is kept on the same grounds throughout the year, and for years in succession, breathing the poisonous gases arising from the foul grounds and surroundings, which after a while become infected. These observations are in regard to all yards, no matter how well kept; but these ills can be alleviated much by attention to the necessities of the fowls,—such as cleanliness, in all its phases, including change of grounds. Here is the advantage of small houses for summer use, which can be moved to fresh grounds.

These removals, from the wild, free-and-easy nature of the bird tell on its constitution, and it is more subject to disease, even in the best-kept yards. But in the majority of cases, fowls do not have these conveniences. Their constitutional rights are violated in the grossest manner. Crowded together, their apartments are cleaned once a year, at corn-planting; kept from the fresh grass, which in freedom it has every hour in the day; kept from the fresh water and fresh soil; fed at intervals of from six to twelve hours, when it is allowed to gorge itself with slops and swill one day, and dry corn the next; kept in the hot sun in summer, and in draughts of air in winter, can we wonder that our domestic poultry are weaker? But the advantages of the wild over the domestic fowl are, in well-kept yards, more than over-balanced by the extra care and attention given them.

But for the greed, the carelessness, the laziness and poor judgment of men, this chapter on diseases would be short. It is by ill treatment in the process of domestication that most of them come. It is claimed that the wild turkey, goose, duck, quail, snipe, prairie hen, woodcock or partridge has not been captured with these disorders. It follows that the wrong is with the handling of the fowls; hence I class nearly all the ills the domestic fowl is subject to, as

OF ACCIDENT AND MISMANAGEMENT.

Success in raising poultry largely depends on a correct understanding of the diseases, and in some way avoiding them. A sick hen is a very unpromising subject, and the hen doctor rarely gets pay for his pills and physic. As a general thing, the best remedy is to kill it. "But," says the reader, "what is the use of this chapter?" Just this: A disease foreseen and warded off is better than as though handled and cured. The adage, "An ounce of prevention is better than a pound of cure," is especially applicable in the henery, for the reason that most of the ills are avoidable, with a little attention. I give it as a general rule, that a fowl well cared for will not be sick; and when it is, it is better to look for the cause, and the cure will suggest itself. There are little indispositions which fowls sometimes exhibit, which are precursors of serious trouble in the hen-yard, which, if taken in time, can be righted with little trouble; but if allowed to run till indisposition becomes a settled disease, it is a poor case, and does not pay—unless it is a valuable one for breeding or exhibition—to try to doctor it much; besides the risk of spreading a bad disorder.

In many of the following cases, the remedy will suggest itself, and I do not mention it:

First—Hens called non-sitters, of which are the Spanish, Leghorn, Andalusian and Hamburgh, do not need any crowding to make them lay. Sometimes they need to be held back, for health. Many times they are forced with warm feed and pepper, though molting, and fail under the process—lay themselves to death.

Second—Hens called sitters, or those predisposed to fat—of which are the Brahmas, Cochins and Langshans—are overfed with meal and corn, and not enough of wheat, oats, buckwheat, grass and the like. They are taken with apoplexy or leg-weakness, or can not drop the egg, and die on the nest; or by confinement and good feed, they put on an excess of fat, and lead a life of idleness. As a general rule, the heavy fowls over two years old are unprofitable.

Third—By harsh handling, falling or other accident, or not having access to shell-forming material, an egg is broken before laid, and death is the result. If the fowl is in good condition at such a time, a teaspoonful of castor oil, by injection, will work the wreck away.

Fourth—A few small hens are put with a heavy, vigorous cock, and are killed.

Fifth—Some are quarrelsome, and worry others to death.

Sixth—They do not have a good, clean dust-bath, and green food,

and are troubled with vermin, and lose their feathers—here is the cause of much disappointment in poultry keeping.

Seventh—They do not have animal food and grass run, and they eat their own eggs and feathers.

Eighth—They go without water, perhaps, one day, and have plenty the next; or they have foul water to drink all of the time.

Ninth—They eat filthy and poisonous matter, or do not have a change of diet.

Tenth—They do not have good shelter from the rain, wind and blazing sun.

Eleventh—Their apartments are badly ventilated, and they are forced to breathe bad air. They are good subjects for cholera, roup, rheumatism, gapes, and canker.

Twelfth—Crooked backs and wry tails are caused by some hurt; many times, I think, by squeezing between the slats of a coop. For that reason, the slats should run up and down. (See Chapter on Coops.) Many times by having been picked or trod upon by larger fowls; or jumping from roosts; or, strange as it may seem, by eating corn in the kernel when too young. In many cases these deformities are hereditary. In-and-in breeding will produce it often, as well as knock-knees, crooked feet and toes, and other deformities.

Thirteenth—Clump-foot is often caused by jumping down too far from roost, and striking too solidly on the ball of the foot. The swelling can be opened and the core taken out, but the foot will always be tender, and will soon swell up again.

Fourteenth—Roup, frozen feet and combs, and other ills, are brought on by the fowls running out in the cold, windy and rainy weather; standing in the rain or snow, or roosting where the wind blows on them, or in a damp, cold place.

Fifteenth—Limbs broken by sticks, stones, dogs or otherwise, can be cared for by shutting the fowl by itself, where it will be quiet. Give plenty and variety to eat, and the fracture will heal itself.

Sixteenth—High feed, and sudden change of feed in hot weather, will often produce diarrhœa or cholera.

Seventeenth—By purpose or accident, cocks get together and bruise each other badly before separated. The result is often disfigurement for life, and sometimes death.

Eighteenth—Fowls are often confined in exhibition coops at fairs, in close rooms, for several days, and do not live long after they are let out. The change, confinement, want of gravel and other things which they were accustomed to have, and the change back, were too much.

The foregoing relates to ills brought on by inattention. I am satisfied, from further observation, that much of the seeming inattention is carried to such an extreme that a chapter would more properly be headed—

Disease and Death brought on by Cupidity and Cussedness.

It is a fact, that so strong is the desire on the part of some to get something from nothing, or bring profit from dead carcasses, that they will knowingly let their stock eat the fowls and animals dying of disease on their places—when they know that, in less than twenty-four hours, the substances which a fowl swallows will be worked over into eggs or flesh. Who will say it is healthy flesh or eggs? The accompanying letter is so to the point that I publish it, and give it so hearty an “Hamen!” as would give me one of the best seats at a Georgia camp-meeting :

WEBSTER, MONROE CO., N. Y., March 28, 1885.

Mr. G. M. T. Johnson. Binghamton, N. Y.:

DEAR SIR:—Your “PRACTICAL POULTRY KEEPING” has come to hand. I have not yet had time to give it a careful reading, but have found good ideas, and much practical information that meets my hearty approval.

On the last page you “invite all poultry-keepers” to write to you. I do not claim that the above invitation is extended to me, for I am not what might be called a “poultry-keeper,” but a small farmer who keeps poultry for profit,—the profit mostly coming from the sale of fresh eggs to consumers during the winter. A basement under my barn, with cow-stables and hen-roost attached, make a fine run for fowls in cold winter weather, and I find them the best investment on the farm.

In speaking of diseased fowls, on page 39, you say: “There is only one remedy that is any way satisfactory, viz., the hand-axe and chopping-block.” This has been my experience and practice; but to prevent “spreading the disease,” the decapitated fowl, head included, should be buried so deep that it would not be resurrected should Gabriel sound his trumpet! instead of being thrown down in the barn-yard for the fowls and hogs to devour, as very many farmers would do. Some farmers, whose cattle or horses have died from disease or accident, have left the carcass in the yard as food for their hogs and fowls, and they—the farmers and their families—have in turn eaten the fowls and swine.

Is it any wonder that we have so many hoggish bipeds among us? Any wonder that scrofulous and cancerous diseases are on the in-

crease? Any wonder that trichina and kindred diseases infest our animal food? All animals dying from disease—fowls included—should be deeply buried, or decomposed with lime or acids, and converted into fertilizers.

And this reminds me of a workhouse boy who had been apprenticed to a farmer, and who, after six or eight months, returned to the workhouse, when the following dialogue took place between the guardian and the boy:

"Did they beat you?" "No, sir."

"Then why did you run away?"

"Please sir, soon after I got there, a pig died; they salted it, and we had to eat it. Then a calf died, and they salted it, and we had fur to eat that too. Then master's grandmother died, and I seed 'em taking some salt to her room! and I run'd away."

Now I cannot believe that any farmer is degraded enough to eat flesh from diseased dead animals, but it is a fact that some *eat the flesh of animals and fowls that have fed on diseased dead animals*. It should be forcibly impressed on the minds of all farmers, that leaving dead animals on the surface, to be devoured by other animals, *is a filthy, dangerous, disease-producing, unlawful practice*.

All of the above you thoroughly understand, and I merely call it to your mind, so that if you think proper, you will mention it in your fifth edition.

Yours, for Progress and Improvement,

LYMAN WALL.

In all of these cases the first thing to be used is—a little common sense. Look for the cause, and check it at once. The appearance of the comb of a fowl is a good indication of its condition. When large and red, the hen is in a thrifty state of health, and her organs in a high state of activity. But when it is purple or pale, we must look out for disease. Under this head, I might appear to be very wise, as some others, and give remedies for every disease, but, like them, I would be obliged when questioned closely, to say, *the hen died*. I am frank to say, that after disease has fastened itself on a fowl, considering the comparatively little value, the risk of spreading the disease, and the trouble, expense and unpleasantness of treating her, that there is one, and only one remedy that is any way satisfactory, and that is so simple, so quick, and so effective, I can give it a high recommend as the best known, and the one which I commonly follow. Here it is—

[See next page.]



But ninety cases of disease out of every hundred are brought on by one of these three causes : 1st, Exposure to winds, cold, rain or hot sun ; 2d, Too sudden change of diet ; 3d, Filthy water, food, apartments, and bad air.

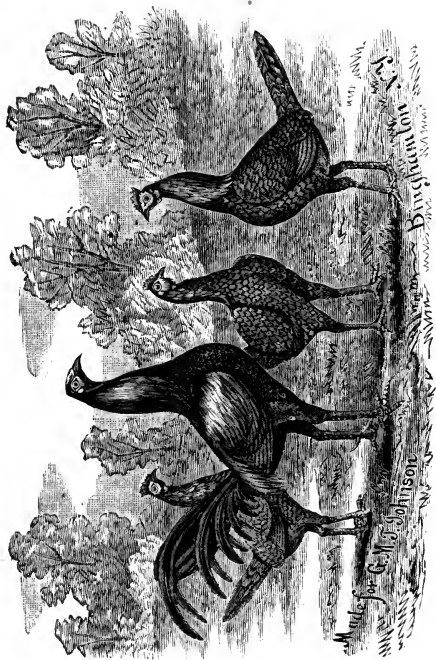
If it is decided to doctor the fowl taken with any disease, let it be at once removed to quarters by itself. Before dosing, we must be fully settled in our own minds what the trouble is, and then attend to it. It will not do to risk the rest of the flock. If we do not find out what is the matter, and the disease does not seem far advanced, we give the fowl comfortable quarters alone, with sunlight and fresh earth, but nothing to eat or drink until the question as to what is the matter, is settled. Many times this alone will set the fowl right after a few days. Perhaps all she needed was rest, and to give her bowels rest. Should the disease prove to be cholera or roup, the hand-axe is the only thing that should be called for. I believe the majority of poultrymen will agree with me when I say, there are more fowls lost by a delay in using the axe than were ever saved by all the medicines known. The three diseases,

PARASITES ROUP, AND CHOLERA,

cover most of the ailments of the fowl, as known to this country. Parasites we class among the diseases. It is the proper place for it. Under this head come Gapes, Body Lice, and Mites.

GAPES

are caused by a little worm, of a light red color, in the fowl's wind-pipe. Each worm is double, the male and female together, somewhat in the form of a letter Y, about seven-eighths of an inch long, the male strongly attached to the female by means of a strong membranous sucker. The heads, when magnified, appear to be all mouth, by which they attach themselves to the lining of the wind-pipe, with a sucker-like grip. These worms lay eggs in great numbers, which are found attached to their bodies. Just where the gape worm came from, or how or when these eggs are hatched, no one knows. Some say the worm is produced from the parasite of the



A GROUP OF STANDARD, BLACK BREASTED, RED GAMES.

body, which finds its way to the wind-pipe, and takes the form of the worm. But that does not seem probable. One thing writers seem to be agreed on : That chickens raised on old grounds, where chickens years before had the gapes, are subject to them, when on new grounds, or grounds not previously infected with them, were free from them. Dr. Dickie says : "I have known the gapes to be very troublesome on one side of a public road, while on the other side the broods were not afflicted, for several successive years, but the disease finally made its way across the road, carried, probably by the chicks themselves from one side to the other." It would seem that the soil on which gapey chickens had lived was dangerous ground.

Symptoms.—At short intervals the chick throws up its head and gasps for breath—is choked.

Remedy.—Like all other fowl diseases, it is much more difficult than the prevention. A much approved plan is to take a feather ; strip it to within half an inch of the tip ; double this tip over, so as to draw the worms out, instead of pushing them down ; dip it in kerosene, turpentine, or carbolic-acid water, and put it down the wind-pipe, which, by opening the mouth, will be seen at the base of the tongue. Turn it round and draw it out. It will probably bring some worms with it. Do so two or three times.

The object of dipping the feather in the kerosene, turpentine or carbolic-acid water is, to kill whatever worms may be left, and the chick can throw them out. A horse-hair, made in the form of a loop, is often used. Destroy by fire all worms extracted. All chicks which die with this disease, should be burned or buried deeply, away from the yards. Many are very careless about leaving the bodies of chickens dying by disease, round the yards. Gapes are rather a result of neglect, one time or another.

One of the most approved remedies is *fumigation*. Put some carbolic acid in an iron dish, and hold it over a fire. When the fumes from the heated acid arise, hold the chick's head in it. It will nearly suffocate it, but that is what will cause it to expel the worm. Sulphur, spirits of turpentine or creosote, are also used.

A person told me that he could cure a brood of chicks, all at the same time, by placing them in a tight box, and blowing tobacco smoke through a small hole. They must be watched to see that they are not suffocated.

Sometimes the wind-pipe is opened from the outside, with a sharp knife, and the worms removed, and the outer skin (only) sewed up.

Another remedy is to confine the chicks in a tight box, and sift

some air-slacked lime through a piece of coarse muslin. This, too, will cause the bird to sneeze and expel the worm.

Douglass' Mixture in the water, when no other medicine is used, is good as a preventive. (See recipes.) A little camphor in the drinking water is good,—only enough to give it a pleasant camphor taste.

As a general thing, however, it does not pay to try to dose chickens. Give them good, healthy grounds and food, and fresh water, and they will thrive.

SCURVY LEGS

are now known to be caused by a parasite working under the scales of a fowl's legs. Wash well with strong soap suds, and when dry, rub with an ointment made of lard, sulphur and kerosene, every week till healed. Do not tear off the scales. They will come off. Wash again in soap-suds, or turn on kerosene once a week, till removed. Two applications will generally be sufficient.

VERMIN.

There are two kinds which feed on the body of the hen: The ordinary *hen louse*, which sticks close to the body, and the *hen mite*, sometimes called a *spider*. It is very small, and hardly noticeable, unless looked for sharply. It is of a grey color, excepting when full of blood, when it is red. It is properly the offspring of neglect and filth, and seldom seen in a flock of fowls when at large, and not crowded in their house. They are a hot-weather insect or bug, seldom troublesome at any other time. They do not live on the body of the fowl, but go on them, commonly at night while on the roost, to get their food. They are properly the hen bed-bug. They live in the cracks of the building, on the roost, floors and sides of the building, and in the nests. They will gather in large blotches; when full, these blotches look red. They will often take possession of adjoining stables, and get on horses and cows, which will rub themselves until they bleed, under the torture of the little pests. It is a very difficult task to get them off a horse or cow. I know one case where it cost fifteen dollars to get them off a horse, after it had disfigured itself badly by rubbing. It does not seem to discommode them if the fowls are all taken from the building. If the weather is warm they will wait, I think, for months, and be ready any day for business. In the summer of 1883, I had a house which was infested with these mites. The fowls were all taken out Aug. 4th, and no other fowls allowed to occupy the house. From week to week I examined the building, which was shut up for the express purpose of testing how long the mites would live. They were there

and came out of the cracks, but in diminished numbers, every time I rapped on the boards, till winter. I rapped at their home again on a warm day in April, after a long, cold winter, the mercury at times having been 30 degrees below zero, and they came out to see what was the matter, running round as lively as in the summer before ; but as I looked at them through a microscope, I thought they looked thin ; I examined the building again on the 8th of May, and on the 20th. I could wait no longer. I tore the house down, finding the bugs yet present in full force. During all this time, from Aug. 4th, 1883, to May 20th, 1884, there had not been a fowl allowed in the building or near it. I would hardly credit this story if I had not myself kept the house under my own eye, with special reference to testing how long, and under what conditions they would live.

These *mites* are so demoralizing to the fowl, and so persistent in holding possession of a house, and also so disagreeable to fight, that a person wants to burn house and all, for the satisfaction of burning them. I am often asked for a remedy. It is hard to give ; and the only one I know of, means work and personal exposure to the pests ; and a person who has once been exposed, will ever after dread an exposure. The mites will make themselves *at home* on the human body, crawling up and down the back, and in the hair or whiskers—but just then the human body does not feel *at home* ! They will live in the clothes, so that a person can not tell when he will feel them : perhaps when leading the choir on Sunday morning, or perhaps when away from home, having an evening chat with his best girl. It is easy for him to persuade himself that he has a touch of the jim-jams, or he may think it best to have a committee appointed to examine him as to his sanity. To any of my readers who may not at all times be precise in their language, I would say : It will do no good to try to express your feelings. It is very hard to get rid of them. The most sure way is to burn one's clothes, and then dip himself in boiling water ! Nothing very pleasant in the remedy, but then it is a great satisfaction to know that the mites are dead ! The best remedy is a preventive—which, in a word, is cleanliness.

If fowls have full range, they will commonly keep themselves clean, but when confined in small yards, the extras must be provided. They must have a good place to dust themselves in fresh dust : it should be changed every week in hot weather. (See Chapter on Poultry Houses.) I have observed that after their dust gets old, they will shun it.

To whitewash a building, the roosts and the nests, is a great help to keep out vermin. Put a little carbolic acid in the wash, enough

to give it a "right smart of a smell." It is also a good thing to wash the roosts and sprinkle the sides of the building with kerosene. This is a sure preventive—very simple, and very quick. Sulphur should be sprinkled very freely on all parts of the building, in the nests and around the roosts. Rub an ointment made of lard, sulphur and kerosene, under the wings and tail of each fowl. Some poultrymen recommend to fumigate the hen-house. To do this, remove the fowls and everything valuable that breathes. Look out for horses, cows and the like. If in the same building or adjoining, remove them. Put two or three pounds of brimstone or sulphur in an iron pot, in such a way as not to endanger the building; apply a match; shut it closely, and let it burn slowly; keep the doors and windows closed for four or five hours. Thoroughly ventilate before letting the fowls in the building.

From my personal observation and experience, I think fumigating is a good thing, but will not rid the house of mites. In a very persistent case, where they had full possession, after fumigating and failing, I used Persian Insect Powder (obtainable at almost any drug store), with a little bellows made especially for blowing it. I blew the powder in the cracks of the building, in the nests, on the roosts, and sparingly among the feathers of the fowls. It was the final blow.

ROUP.

This word covers a multitude of ills. It is often called *sore head*, *sore throat*, *inflamed eyes*, *swelled head*, *catarrh*, *pustulated nostrils*, but all of these are rather different phases of the one disease—Roup.

Symptoms.—As a general thing, this disease is the result of a cold. The fowl appears so affected: it sneezes and coughs; its eyes run, and it acts very much as though it felt the same as a person would with a cold. The hen appears drowsy, goes off in a corner of the yard by herself, mopish; she sneezes and gasps for breath, and appears choked. After a few days, the head swells. Offensive watery substances run from the eyes, and the comb has a dead look. The fowl's throat is often so swollen that it can swallow but little, and in its endeavors, it will stand at the drinking vessel going through the motions,—the result of which is simply rinsing out its poisonous mouth in the water for other fowls to drink. Hence we see how important it is to remove the fowl when first taken. Its very breath is poisonous. The disease, after well settled, is contagious, and will soon spread through the flock.

The Remedy.—I am very strongly of the opinion, that after the disease has passed the stage of *cold*, and become *roup*, the only practicable way is to kill it, and give it a decent burial. And what

remedies I offer, will apply to the first stages, or *cold*. What has been said heretofore about warm houses, freedom from draughts, and good ventilation, should be well looked to; the sick one not further exposed; cayenne pepper put in its drinking water till it is a sort of pepper tea; bathe the face, nose and head with kerosene; also put half-teaspoonful in the mouth—do this once a day; mix cayenne pepper, or in want of that, use black pepper, in warm feed, in which is mixed hot lard or butter. This, in ordinary cases, will prove effectual as a remedy in a few days' time. Do not use the kerosene longer than is necessary.

A person writes me that he has had very good success by using glycerine as an ointment for the head, and given in the mouth.

The following letter on the subject I believe of value:

PRINCESS ANNE, Md., }
Jan. 20, 1885. }

G. M. T. JOHNSON—*Dear Sir*:—I think I have found a specific for rouse, in Vaseline. My flock of thirty-six have nearly all had it, and I have not lost a case in which I have tried Vaseline. I feed them with meal, with a teaspoonful of cooking soda to the half-gallon; the same of pepper and pulverized sulphur. After they have well eaten, give each one a piece of Vaseline the size of two grains of corn, and grease thoroughly the comb, and all parts that are sore, with the same. Give weak pepper tea to drink, and keep all the sufferers shut up by themselves. Try this for yourself, and I think you will like it. It has cured mine, and I think will yours. My fowl caught it from an unburied victim of an adjoining flock,—which proves, as your book says, that it is highly contagious.

Miss ANNIE E. UPSHUR.

Princess Anne, Somerset Co., Md.

Even after the case becomes chronic, I would give the foregoing remedies a good trial.

James L. Bowen, a breeder, gives this as his remedy: "Dissolve a teaspoonful of chlorate of potash in a cup of water, and give a teaspoonful of the mixture once or twice a day. If the nostrils are bad, rinse them with a solution of sulphate of zinc, about the same strength as above, using a small, rubber-headed, glass syringe." This he recommends, if the case is taken in time.

T. B. Dorsey, another breeder, gives the following as his recipe: "Give one-half to a full teaspoonful of castor oil, and put in a dry, warm place. Feed with soft food only, mixed with hot ale and red pepper; examine carefully for vermin, and clean. Wash under the wings with whiskey. Give little water, and that with tincture of

iron or cayenne pepper in it, once or twice daily. If no better in two days, give a drop or two of turpentine in morning feed, or one-half teaspoonful of balsam capalba. Syringe nostrils if foul, with weak solution of carbolic-acid water or chlorinated soda. Do not dose too much. Trust the hot ale."

Lewis Wright, generally regarded as a good authority, says: "Keep them warm, and feed with meal only, mixed with hot ale instead of water. Add Douglass' mixture to the water, and give daily, in a pill of meal, half a grain of cayenne pepper, with half a grain of allspice. Give also half a cabbage leaf every day, and wash the head and eyes, morning and night, with weak vinegar or a five-grain solution of sulphate of zinc."

A home remedy, which has been highly recommended to me by those who have used it, is: Mix lard stiff with cayenne pepper, and three times a day, till better, put down the fowl a piece as large as an ordinary sewing-thimble, or eventwice that; keep in warm room, and give warm, soft feed.

It will be observed that all of these amount to about the same thing—that is: Clean out the poisonous substances from the head, and stimulate the fowl; this, added to careful nursing, is expected to cure, if it is not too far along. We must keep on the watch for this disease; keep the fowls in-doors in bad weather; keep their apartments dry and clean, and we shall keep our fowls.

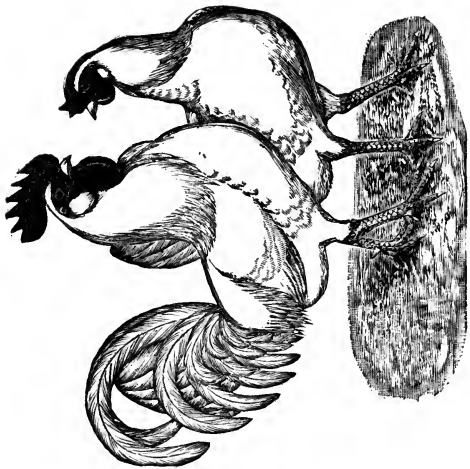
CHOLERA.

Symptoms.—The fowl has a sleepy, drooping appearance; has a slow, staggering gait; is very thirsty; its comb loses its natural color; there is diarrhoea, a greenish discharge. If left alone, the fowl will live but a few hours.

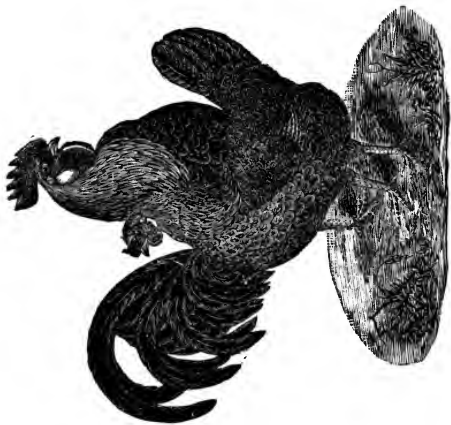
Until within a few years this disease has not been troublesome in this country. It is now much more prevalent in the South and West than in the North and East. It has been considered by many that it was a disease of filth, spontaneously produced; by others, that certain localities, especially low and damp, were more subject to its ravages, and that cleanliness and dry grounds were the only preventives. I am persuaded that these conditions act very strongly in the operation of this disease, for and against, but from the investigations and discoveries which have been made within the past five years, I am more persuaded that chicken cholera is a contagious disease; that under certain conditions—which are simply taking in the system, by mouth or inoculation, one of the poisonous germs—the fowl will be taken with the disease, however well it may be cared for. It has been discovered that the cause of cholera is a

microscopic organic germ; that this germ will multiply itself till all of the blood and the flesh and excrements are filled with them. It spreads mainly from the excrements. The least particle taken into the system will produce disease. It is also given by inoculation. If with a sharp-pointed knife we scrape off a little skin of a fowl, and touch it with the minutest particle of blood or excrements of a diseased fowl, that fowl will have the disease in regular order, whether the fowl has been cleanly kept or not.

I will give some abridged extracts from Professor Pasteur's address before the International Medical College, in London, August 8th, 1881, as to the virulence of this organic germ, producing cholera. He says: Let us take a fowl which is about to die of chicken cholera, and let us dip the end of a glass rod in the blood of the fowl, with the usual precautions. Let us touch, with this charged point, some chicken broth. In a short time the liquid will become turbid, and full of tiny microbes. Take from this vessel as much as can be taken on the point of glass the size of a needle, and touch a fresh quantity of chicken broth, and the same phenomena will be produced. In the same way, the third, fourth, to the hundredth, and even the thousandth,—and in a few hours the liquid becomes filled with the same minute organisms. Let us take one of our series—say the hundredth or thousandth—and compare it, with respect to virulence, with the blood of a fowl that has died of chicken cholera. Inoculate under the skin ten fowls, each separately, with a drop of infectious blood, and ten others with a drop of the liquid. Strange to say, the latter ten hens will die as quickly, and with the same symptoms as the former ten. The blood of all will be found to contain the same minute infectious organisms. From this, the reader will get a good idea of what chicken cholera is, and how it is communicated. It will be seen that fowls cannot go on infected ground, and that a fowl which has the disease cannot be cremated too soon for the good of the flock. It should not be buried, but burned, with all its feathers and blood and excrements; and its house, roosting-place and grounds thoroughly disinfected. The best disinfectant is fire, but as that is not practicable, the next best is a solution of sulphuric acid. It is discovered that this kills the germs effectually. Sulphuric acid is cheap, but it must be carefully handled until it is diluted. Make a solution in the proportion of three pounds of sulphuric acid to forty gallons of water, well mixed, and thoroughly wet the grounds and roosts and everything connected with the disease. It can be applied pretty well with a hand-sprinkling pot. It will not do to let a germ go unwet,—



WHITE LEGHORN FOWLS.



BROWN LEGHORN FOWLS.

they will be as virulent five years hence as now. Here is an explanation how it is that fowls have cholera on the same grounds year after year ; whereas yards not far distant, that have not had it, do not have it ; but a fowl that has once walked in an infected yard, I would not allow in a healthy yard of fowls. A minute particle of excrement could easily be carried on the foot.

If we can vaccinate for cholera in its worst form, we may ask, Can we not for the milder form, as we do for the small-pox in a mild form? Professor Pasteur has produced virus for that, with which he vaccinated fowls for cholera with success.

But from the nature of the case, this remedy is very impracticable for the general poultry keeper. It does, however, give us a good understanding of the virulent nature of the disease. We must have, if possible, a remedy which can be obtained and used by any one.

In the summer of 1883, a correspondent of the "Home and Farm" called for a remedy for the chicken cholera. In response, the following remedies, suggested by those who had tried them, were published in that paper. I gave their letters in full in fourth edition, but here in an abridged form, to give room to others :

[REMEDY NO. 1.]—My remedy is tobacco. Take a piece of plug tobacco and pour hot water over it, making a strong tea ; then make your dough up with it, and feed to your chickens three times a day. It has never failed to cure for me, unless my chickens were too sick to eat.

MRS. H. O. WILLIAMS.

Thomson, McDuffie County, Ga.

[REMEDY NO. 2.]—In answer to your Sulphur Springs (Texas) correspondent, I would say, Try pulverized nux vomica for chicken cholera ; one teaspoonful to twenty hens, twice a week, given in their food, is a never-failing preventive. To all that are visibly affected, give a drench made of the same. This is a sure cure for chicken cholera, and, as far as I have tried, is equally good for hog cholera.

Social Hill, Ark.

V. T.

[REMEDY NO. 3.]—We have tried a cure for several years, and it has never failed. I found the recipe in "Household and Farmers' Cyclopaedia." For chicken cholera—Alum, two ounces ; resin, two ounces ; copperas, two ounces ; sac sulphur, two ounces ; cayenne pepper, two ounces. Pulverize, and then mix three tablespoonfuls of the powder with one quart of corn meal, and dampen for use. This quantity is sufficient for twelve chickens, and may be used either as a preventive or as a cure ; for the first, it should be given once or twice a week.

China Grove, N. C.

W. H. CORN.

[REMEDY No. 4.]—Take one tablespoon of copperas, and pour a pint of boiling water in it; mix with corn meal, and feed to fowls.

Madison, Morgan County, Ga.

A. H. MALLORY.

In my fourth edition of this book, I asked those having recipes which they knew to be good, to write me. In response, I have received two or three. The following appears from good source:

Fort Brady, Mich., June 3, 1886.

G. M. T. JOHNSON:—My father, at Bristol, England, is a breeder of fancy poultry, and maker of the Slades Improved Incubator, patented March 22d, 1879. He has the acknowledged best yards of White Leghorns and Silver-Gray Dorkings in the West of England. I here send you a receipt for Cholera that we have used with good effect in our yards in England. I do not see it in your book:

Glycerine, $\frac{1}{2}$ oz.; Carbolic acid, 10 drops; Water, $\frac{1}{2}$ oz.

When the fowls are first affected, give five drops, and repeat every twelve hours. Sometimes we have to give a second dose, but very seldom a third. The second dose usually cures them. * *

I remain yours, respectfully,

ED. SLADE.

Sault De St. Marie, Mich.

CANKER.

The most of cases which I have seen were brought on by poor ventilation of the fowl house. Filthy apartments, and food, and drink will produce it.

Symptoms.—The cankerous blotches will appear on the outside, and in the mouth, and on the tongue.

Remedy.—I have found the best remedy to be fresh air and clean apartments. I have known cases where the fowls could hardly breathe, which were cured with no other remedy. It is best sometimes to open the mouth and scrape off the canker with a chip—not till it bleeds—and then apply, with a swab, a solution of equal parts of chlorate of potash and alum. This will generally effect a cure if the house is dry, clean and well ventilated.

DIARRHŒA.

It is often that this is confounded with cholera. It is brought on by stale and filthy water, damaged food, exposure to the hot sun, foul houses and yards, and crowded apartments.

Symptoms.—Drooping, emaciation, droppings white and yellow, which stick to the feathers.

Remedy.—Give five drops of camphor on a piece of bread, and put half teaspoonful in a pint of drinking water, till better.

Douglass' Mixture in the water, as directed, will act as a remedy.

It is best to confine the fowl to comfortable quarters, and feed very light.

CROP BOUND.

The crop is sometimes hard, and sometimes soft. In either case the passage out is clogged up. The trouble is often removed by giving the fowl a tablespoonful of castor oil, and working the crop, holding the head down. When that does not relieve the trouble, cut into the upper part of it carefully; remove the contents; wash it out with warm water, and put into the crop a tablespoonful of lard; carefully sew up the crop and skin separately, with white thread, or silk if convenient, and feed lightly with soft feed for a week or two.

SOFT SHELL.

In many cases it is a peculiarity of the fowl, and nothing can remedy it. In other cases it is too high feed, or want of shell-forming material. Give plenty of oyster shells, broken fine.

APOPLEXY.

Caused by over-feeding. Little can be done with the individual fowl but to bury it, as the bird is often dead before we are aware that it is sick. But the dead fowl will suggest a different treatment of the living.

WORMS.

Symptoms.—The fowl is emaciated; worms appear in the droppings, and sometimes prove very troublesome.

Remedy.—A tablespoonful of soft soap to a quart of meal will clear them out; and a good dose of castor oil will often do the work.

FROST-BITES.

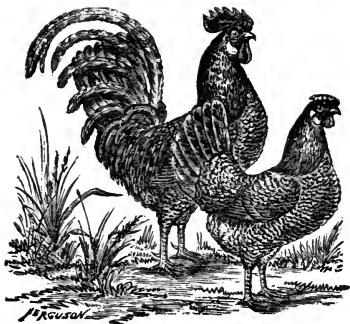
Bathe the parts frost-bitten in camphor or turpentine; then rub in sweet oil or carbolic salve. Oil will prevent frost-bites, to a certain extent, as it will turn the water. Frozen wattles often come from the fowl getting them wet, while drinking, and the water freezing on them.

BAD FEATHERS.

White feathers will sometimes appear in the plumage of well-bred black or brown fowls,—which are not admissible. I think in many of these cases, the bad feathers are produced by some slight hurt while growing. A fowl that has been an underling in the flock, or has had hard fare, will show now and then a white feather in the wing, while the ruling ones will not.



GROUP OF BLACK SPANISH FOWLS.



DOMINIQUE LEGHORNS.

PART IV.

THE DIFFERENT BREEDS.

It will be impossible to give here as full a description and history of each variety of fowls as could be desired, but what space we have will be used to the best possible advantage. Strictly speaking, there is no such thing as a pure bred fowl. There are those that have been bred straight for many years, and now produce chicks like parent, but they have relatives, and not very far distant, that go by another name. Our majestic Brahmas and Cochins—Light, Dark, White, Black, Partridge, and Buff—are all understood to have come down from the old Cochin China, or Shanghai, first imported from China, about 1847. For several years they were bred all sorts and colors—anything for size; but soon certain fanciers took pains to select to certain points of color, build, etc., till now we have from them seven “breeds,” all from one parentage a little over thirty years ago. Again: Foreign blood is introduced with a deliberate purpose. It is well understood that Black Spanish blood has been brought into the Black Hamburg, which gives it

more size, and otherwise improves it. Of course when foreign blood is so brought in, it takes several years to get the new family "toned down."

A breeder near Philadelphia announced in the spring of 1880, that he was bringing Black Spanish blood into his Brown Leghorn stock, and that in a few years he would produce a superior strain of Brown Leghorns. But he may fail entirely. It may be necessary to reduce the Spanish blood to one-eighth or one-sixteenth, to get rid of the dark legs and black feathers. At all events, it will take several years before it is a safe strain. New breeds are often formed directly from others. It sometimes happens that a chick will be hatched, marked entirely different from parent stock. It is called a "sport." By careful selection of chicks from this "sport," a new breed may be formed. It is only six years that the Rose Combed Brown Leghorn fowl has been bred, and the Rose Combed White Leghorn fowl has been known by the public generally only eight years; and the Pea Combed Partridge Cochins only ten or eleven years. The Wyandotte, supposed to be a cross between the Dark Brahma and Silver Spangled Hamburg, was admitted to the standard in 1883; and this year, for the first, the White Wyandotte has come before the public as a distinct breed. It is a "sport" from the laced Wyandottes. (See full-page plate.) As a general thing, it takes ten or twelve years to get a new variety so it will breed straight enough to entitle it to the name of "breed."

By general consent, fowls are classed as *Thoroughbreds*, *Crosses*, and *Dunghills*.

The first is one bred straight for a number of years, to certain qualities as to color or markings, size, shape, adaptedness to market, laying, etc.

A *Cross* is the chick of a pure bred cock of one variety, with a pure bred hen of another. Some of the crosses have particular qualities which are very valuable.

A *Dunghill* is one bred from our common stock, or mixtures of different breeds. The merits of any fowl depend on its adaptedness to certain demands of the people, who will pay money for it, whether it be for fancy or for market; and just here comes in the question of value of poultry, or of anything else. One will estimate its value by the market prices. Another by the American Standard. Another by the pleasure he derives from it. Another by the pleasure his wife and children derive. And who will say this last man is not as nearly correct as the first? A thing is of value to us, to just the extent that we can get good from it. A friend said

to me, that he would sell his whole flock of thoroughbred, Black Spanish fowls cheap, as he was going to move away ; but he pointed out a common, short-legged, red rooster, and said he would not take a ten-dollar bill for that rooster. Why? It was one his wife had raised from a chicken, and she thought so much of it. That remark satisfied me that he was one of the best judges of value I had met. To me, the rooster was worth about fifty cents, to roast. It was not my place to say it was not worth ten dollars, for it was—to him. If there is a demand for fowls of a particular feather or markings, shape or color, then these fowls are of value according to the amount they will bring. That is what gives value to many of our thoroughbreds. There are many mixtures that are just as good for the table or eggs, as any thoroughbreds, but they are of no value otherwise. There are many pure varieties just as good for market and eggs as any mixture, but their great value is in their purity of blood.

ASIATICS.

Probably there never has been more excitement over domestic poultry than there was in England on the first introduction of the Cochin China or Shanghai fowl. That was the first great interest taken in domestic poultry for fancy. Many acted crazy over the new variety,—which was to make such a revolution in the poultry yards in England and America. They were first introduced into England about the year 1847 ; were brought direct from Shanghai, China,—sent by the British Ambassador to the Queen of England. The excitement was so high, that men paid as much for a trio as is often paid for a farm in this country. One hundred dollars was only an ordinary price for a cock of the first importation. One brought one hundred and fifty dollars. Two hundred and fifty dollars for a trio was cheap. For several years the prices were very high. The stock was known only as Shanghai or Cochin China. They were not assorted at all, but bred all colors—white, black, buff, partridge, gray, brown, and drab,—one as good as another. It was several years before fanciers separated them, and bred to certain colors and markings, till now we have the Partridge, Buff, Black, and White Cochins ; also the Brahmas. (The Langshans are of a late importation.) Any one variety is a great improvement on the originals. The interest awakened at that time has never died out, but has left the domestic poultry in a better position than ever before. It will be a long time before thoroughbred poultry will not be sought after and highly prized. Ten and fifteen dollars are very common prices now for a fowl of good blood,

and for choice specimens as high as one hundred dollars is often paid for individual fowls. These remarks as to prices are not confined to Asiatics, but apply to all choice thoroughbreds.

The general characteristics of the Asiatics are: Broad across the chest; high from breast-bone to back-bone; short in proportion to breadth. They are naturally very quiet, and are easily handled. They are slow, awkward, and good natured. A fence three feet high will keep them. They are hearty and hardy. We never have any trouble with the chickens after they once get squarely on their feet. They grow very fast, and are tender eating till grown, when they weigh—cocks, from ten to thirteen pounds; hens, from seven to ten pounds.

COCHINS.

The Buff Cochins resemble the first importation more than any other. It may be a cause of wonderment that there should be so many different varieties from one; but it is not strange at all. Fowls not bred strictly to feather, will throw all sorts. It would be strange now to get anything like a black or white fowl from the Buff Cochins, for the reason that they have been so long bred strictly to the buff color. In that case they take back a number of generations. The combs of all Cochins (except the Pea Combed Partridge), is the single comb, quite small; body large; legs short and stout, with feathers down to the tip of toes. The Buff Cochin should be solid buff color, both cock and hen. The tail feathers will be more or less black,—the less the better. The

PARTRIDGE COCHIN

has a solid black breast, with black wings and tail; feathers on the legs should be black. The neck and hackle should be bright red. The hen should be marked much like the wild partridge, each feather worked in rings.

The White Cochin is solid white. The Black Cochin is glossy black. All of these varieties breed true to color; few culls.

BRAHMAS.

There are only two varieties,—known as the Light and Dark Brahmās. I think I may safely say the mantle of the Old Cochins, with their favor, has fallen on the Light Brahmās.

I think it is at present held in more general favor, and is in more yards in the United States, in full or part blood, than any other variety. It is truly a majestic bird, and if well marked and clean, a handsome fowl,—that is, when grown. From the time it is four

weeks old until full grown, it is anything but handsome. Unlike the Cochins, they are nearly naked all summer,—long, leggy, and awkward. Their backs are bare,—many times sun-burnt red. All the Brahmas and Pea-Combed Partridge Cochins have the small pea comb.

LIGHT BRAHMAS.

The Light Brahma cocks and hens are marked alike. The general plumage is white, which, with age and exposure to the summer sun, sometimes has a straw-colored tinge; neck finely penciled black; wings white and black (only the white shows); tail black, or nearly so; feathers on the legs, to tip of outside toes, white.

DARK BRAHMAS.

The cocks have solid black breast, wings and tail; finely penciled hackle. The hen is marked much like the Partridge Cochin hen, excepting the color is of a dark grey and white. The Brahmas, like the Cochins, are good sitters,—too much so for general purposes. They are tender and kind mothers. I think they are too heavy for sitters on eggs of light-weight hens. They break too many eggs. All of the Asiatics lay a buff-colored egg,—some much darker than others.

LANGSHANS.

First found in Langshan, China, about 1872, by a nephew of Major Croad, of the British army. They somewhat resemble the Black Cochins, and buyers must be careful or they will get more Cochin blood than they pay for. They have longer tails than the Cochins, and breeders of them say they are better layers and table fowls. (See cut on title page.)

SPANISH.

Under the head of Spanish varieties, the American Poultry Association has classed the Black Spanish, Andalusian, White, Black, Brown, and Dominique Leghorns. The Leghorns, it would seem, should be classed as Italian fowls, as they came from that country. Just why they are classed as Spanish, we can not say, unless it is on account of their similarity. They all have high single combs, standing straight on the cocks, but falling to one side on the hens. They are all very trim, proud and quick. As to size, they come in about the following order: Black Spanish, White, Brown, Dominique, and Black Leghorns and Andalusians, and now the Minorcas. (See illustration on another page.) They are all great layers, laying often more than two hundred eggs each in the year, if well cared for. They are called non-sitters. They do not want to

sit much, and are not very persistent, but if left alone with their eggs in their nests, will sit, but are uncertain, easily frightened, and if disturbed, apt to leave their nests entirely; poor mothers,—too nervous. They all lay a white egg. The

BLACK SPANISH

lays a large one. They lay the largest of any hen, unless it is the Houdan; larger than the Brahmas or Cochins, generally. Two Black Spanish or Houdan eggs are larger than three Polish or Hamburgh eggs.

The fowls are a jet, glossy black, with high combs and large wattles. The side of the face is solid white; hence they are often called White-Faced Black Spanish. This white grows thick and heavy after the first year; quite often gathering over and under the eyes so heavily as to almost blind them. In body they are larger than any of the Leghorns. Their legs are of a dark lead color, almost black, and their meat on the blue tinge; not a good fowl for the table or market. They are great layers, quite often laying themselves to death. They are, of course, very hearty, and make a great call for meat and bone. This is natural while laying.

And just here comes in a cause for a great drawback in the Spanish,—they must and will have meat. If they are confined closely and do not have a good supply, they will pull feathers off each other and themselves, and eat them. I have seen some closely confined yards, where they were picked nearly naked. The only real remedy is to give the fowls good range and plenty of meat. For the cold, northern sections, they are rather tender, and should be well protected from the cold winds. If there is such a variety as White Spanish, it is not generally known.

ANDILUSIANS.

They are a handsome fowl, of the slaty blue color, with a darker hackle; have white ear-lobes, and closely resemble the Leghorns. They are of about the size of the Black Leghorns. Were brought to this country from Andilusia, Spain, from which province they take their name; not a hardy fowl.

LEGHORNS.

They derive their name from the City of Leghorn, in Italy, from which port they came. We first hear of them about the year 1852, in England and America, but they did not create anything of the excitement that the Cochins did on their advent,—so that days and dates are not so definite.

The White, Brown, and afterward the Dominique, and only within a few years the Black Leghorns have been known ; the Rose Combed White and the Rose Combed Brown Leghorns were admitted to the Standard in 1883, probably all from what was known thirty years ago as the Red Leghorn. They all have white or straw-colored ear-lobes. With the exception of the Black Leghorns, they have yellow legs, and are great layers, of white-shelled eggs. The

WHITE LEGHORNS

lay the largest egg. They stand confinement well if properly cared for, but lay best with a good range. Like the Black Spanish, the high comb and long wattles make them good subjects for frost. It is hard to bring them through the winter with untouched comb and wattles. They must not be allowed to run out in the cold winds. They will stand quite cold weather if in a room where the air is still. The basement to a barn furnishes a good place for Leghorns and Spanish ; or a small, low house, well banked up, and covered with dirt or straw. Some winter them in their cellars. The

BROWN LEGHORNS

are marked much like the Black-Breasted Red Games. The cocks have solid black breasts, flight feathers and tail ; bright red hackle and body. The hens are a penciled brown. The

ROSE COMBED WHITE LEGHORNS

resemble the Single Combed White Leghorns in every way excepting comb. That is like the Hamburgs' comb. The

ROSE COMBED BROWN LEGHORNS

are similar to the Single Combed Brown Leghorns, excepting in comb. The

DOMINIQUE LEGHORNS

are similar to the others in everything excepting color of the body. The

BLACK LEGHORNS

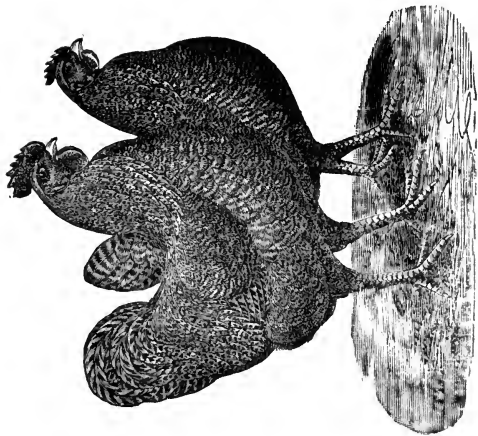
are smaller than the others. Their black is not so glossy as the Spanish. It is not a desirable variety. Its color, size, and small eggs are against it.

FRENCH FOWLS.

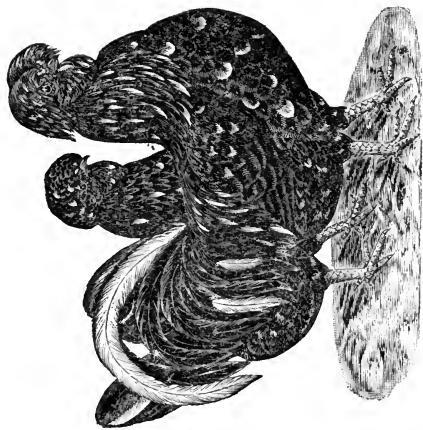
There are three general varieties—the Houdans, LeFleche, and Crevecœurs. The

HOUDAN

is by far the most popular. They are good-sized birds, the cocks weighing from five to six pounds, and hens from four and a half to



PLYMOUTH ROCK FOWLS.



HOUDAN FOWLS.

five pounds. They have a heavy beard and top-knot, which falls back, in front of which there is a V-shaped comb. Cocks and hens are marked alike. The plumage is speckled black and white; the black predominating, and growing lighter colored with age. Their legs are short and thick, lead color, with black spots. They have five toes on each foot. It would appear that this breed is made up of the Silver Polish and one of the Dorking varieties. I have seen the Dorkings crossed with different breeds of fowls, and in all I never yet saw a chick where the fifth toe was left off. The plumage is much like the Silver Polish, but the shape of body is more of the Dorking variety. Nothing is known of its origin. They are hardy fowls, feather early, and are good to kill at any age; a plump and good fowl for market; the skin is flesh color; they are great layers, of large, white eggs; are non-sitters, great foragers, wandering a long way from their coop for food. There is a great difference in fowls in this respect. In a country of hawks, their crest is against them. They combine the two qualities of good layers and good table fowl as well as any variety that I know of, but they are hard to breed to feather. A good proportion of the chicks will be faulty for exhibition, in one way or another. As to the fifth toe, it is of no use; is in the way; unsightly, and really is a deformity, which the Standard says can not be dispensed with in a good Houdan.



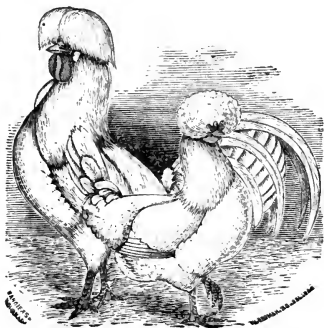
LE FLECHE FOWLS.†

LE FLECHE.

Almost a French edition of the Black Spanish, which fowl it resembles very strongly, excepting in comb. It has two spike-shaped prongs, like horns, standing straight up. These three breeds are very popular in France.

CREVECŒUR.

This fowl is black, about the size of the Houdan, with small beard and crest. It is of solid black ; good layer and table fowl. It is no favorite in this country, and but little bred here.



WHITE-CRESTED WHITE POLANDS.

POLANDS.

The Polands, like the Hamburgs, are properly classed as Fancy Poultry. They are very handsome, but tender with ordinary treatment. They cannot hold their own in a promiscuous flock. Bred by themselves, and not too many in a flock, with extra care, they are brought to perfection early, and are a reward to their keeper.

They are classed as White Crested Black, White Crested White, Silver Spangled and Golden Spangled. They are about the size of White Leghorns ; are fair layers of small, white eggs. They require extra watching in times of rain or snow. Their crests get wet, which keeps their heads cold, often resulting in roup. In a country of hawks they are an easy prey, as they can not see their enemy till he has them in his claws. They often wander off, and are not able to find their way back. It is sometimes necessary to clip the

feathers which hang over the eyes. The one who wants a few choice and handsome fowls, and can give them a little extra care, will find them one of the best for pleasure. The

WHITE CRESTED BLACK POLANDS

are solid black with a heavy white crest, dark lead colored feet ; in the cock falling over on all sides like an umbrella, with white earlobes, and a V-shaped comb, the smaller the better, even to no comb at all. The cocks are very proud, and very gallant. It is hard to get the heavy white crest, with every feather of the body black. Some of the wing feathers are sometimes tipped with white, which is a damage to them. The

WHITE CRESTED WHITE POLANDS

require about the same description, excepting that the whole plumage is white, and the crest not quite so large. The

GOLDEN POLANDS

are red and black spangled fowls. The crest of this variety is smaller than that of any other. The

SILVER POLANDS

are black and white spangled. There are two kinds—the bearded, and the non-bearded. (See Cut.)

The origin of the Polands is unknown. There are no more in Poland than any other country. Some claim that they get their name from the word “poll,” signifying a crown.

GAMES.

What is said on this subject in my former editions has received the friendly criticisms of some of our game fanciers, and as I am not so thoroughly posted as though I had made this variety a specialty, I have solicited the assistance of Mr. H. P. Clark, a game fancier of Wooster, O., who contributes the following :

“GAMES.

The games of America may be divided into two classes. First—the Original Games or Fighting Cocks. Second—the Standard or Exhibition Games.

Birds of the FIRST CLASS are of all colors, weighing from four to eight and a half pounds.

There is great diversity in the different strains : Some have tassels or crests, others muffs or beards like Houdans, and may have single combs, rose combs, or no combs at all ; but the type usually

seen may be described as of single comb, medium or low station and heavily feathered, with full hackle and tail, and very stout and muscular in build.

The **SECOND CLASS** comprises the following varieties: The **BLACK BREASTED RED COCK** has black breast, tail, thighs, wing butts and wing coverts, elsewhere a brilliant red.

The **RED PYLE COCK** is the same color as the Black-Red, substituting white where the latter is black.

The **SILVER DUCKWING** is like the Black-Red, except being white where that fowl is red.

The **YELLOW or GOLDEN DUCKWING** has black breast, tail, thighs, wing butts and wing coverts; hackle and saddle are clear straw color; back and wing bows are bright copper or golden color.

The other three varieties of this class—**WHITE**, **BROWN-RED**, and **BLACK**—are sufficiently well described by their respective names.

These varieties were formed by introducing Malay blood into the old Pit stock, thus producing birds very different, both in station and general make-up, from those of the first class, and also lacking in gameness. They are very short in feathers, having single comb, which in cocks is closely dubbed; long head, neck and legs, and are very upright and tall; have small "whip tail," and their wings are smaller, and folded closely against the body; are very trim and neat in appearance, and beautiful in color, of whatever shade. The cocks average six and a half to eight pounds.

Aside from their stately bearing and fine symmetry—in which points games excel all others—they are one of the most useful breeds of domestic poultry. To the farmer, they have many traits to recommend them. In the first place, they are about the hardiest, and most free from disease; then, they are good foragers, and so of little expense to feed; are excellent layers, and have the very finest quality of flesh. They are the only fowl which can defend their young from rats, cats, hawks, and other like enemies.

Games have a reputation of being very quarrelsome, but this is much exaggerated, as well bred Pit Games are not more so than are common chickens. They are not bred to be savage, as some persons suppose; for if this were so, they could not be well pitted, since they would be dangerous to their handlers, rather than to their opponents. They must be courageous, but not vicious nor pugnacious.

Game cockerels, when about five months old, must be "dubbed." This consists in removing the comb and wattles, with a sharp pair of scissors.

MALAYS.

The cock is very tall, has a peculiar "nub" comb, and small wattles; long head, neck and legs; rather small, drooping tail; and general plumage of very close, hard feathers. The cock is the same color as the Black Red Game; hen is cinnamon brown.

THE BLACK SUMATRA.

Black lustrous plumage, small pea comb, and long drooping tail."



BLACK RED GAME COCK—STANDARD.



BLACK-RED GAME COCK—PIT FOWL.

I here give cuts showing the difference in appearance of the Standard or Show Bird, and the Pit Fowl—both of the Black Breasted Red Game variety—in full feather. It will be seen that there is a marked contrast in the figure and make-up of the two classes. The Pit fowl, before going into the pit, has to go through a special training and trimming. There are many who have no idea as to what is done to prepare a cock for the pit. Mr. Clarke has, at my request, given a little description, which will be of interest to my readers. He says:

"In preparing cocks for the pit, one seeks to obtain the greatest amount of muscle, hardness, and endurance, together with the least weight of flesh. This is accomplished by continued exercise and special feeding for a space of about two weeks.

"When first put up for conditioning, saw off the cock's spurs, leaving on each leg a stub of $\frac{5}{8}$ inch, on which to fasten the steel gaff. Then, just before the fight, the bird must be trimmed or "cut out." To do this, trim off the long, glossy feathers of the hackle and saddle; cut short the soft, fluffy feathers on the under side of the body, and around the vent, also the sickles of the tail; trim the wings, beginning at a point about two inches from the tip of the longest feathers, and cutting straight toward the middle of the back; then trim the main tail feathers, leaving them about five inches long.

"There are seven principal styles of steel spurs: Regulation, Singleton, Cincinnati, Drop Socket, Half Drop, Thimble, and Slasher. These are in length from $1\frac{1}{4}$ to $3\frac{1}{2}$ inches. The *standard*

gaff is of Regulation style, the blade round, one and a quarter inches long, and rising in an even curve from the lower rim of the socket to a point a little higher than the upper rim. To put the gaff on, first wrap chamois skin or old kid around the stub of the natural spur,—wrap on enough to make the gaff fit tightly; then tie on by wrapping stout cord or “wax ends” strongly over the leathers around the cock’s leg. If the gaffs be short in length, set the points of the blades well in between the cock’s legs; if long, set wider.

“In the pit, cocks are matched by weight—give or take two ounces; a stag or a blinker cock is allowed four ounces when pitted against a perfect cock, but are matched among themselves the same as other birds.”



GAME COCK.

The accompanying cut represents a Game Cock fitted for the pit, trimmed and armed. Perhaps it is well to say, His pride is not in his beauty.

HAMBURGHES.

Originally from Holland, as their name would indicate. Silver Spangled, Silver Penciled, Gold Spangled, Gold Penciled, White and Black. All of these varieties are small, light of body, and require a high fence. For eggs, they are first, and will excel the Leghorns under favorable conditions. I put them all with the Polands as tender varieties, excepting when raised alone and with great care. It is to be noticed that all varieties of fowls which feather early, require extra care till about one-third grown. After that, they are past their critical period. Their eggs are small and white. It is a very rare thing for them to want to sit,—laying from early spring

to late in the fall. They are very trim and graceful. All have the white ear-lobe and rose comb, which stands on the head like a crown. The

BLACK HAMBURGH

is the largest, which is about the size of the Brown Leghorn. It is of glossy black. The

SILVER SPANGLED HAMBURGH

has white feathers, with the tip of each one black, and is one of the handsomest fowls ever kept. The

GOLDEN SPANGLED HAMBURGH

is marked the same, with the exception that red is in the place of white. The

SILVER PENCILED HAMBURGHS

have a grayish appearance, with black tails. They resemble the hawk in color. They are often called Everlasting Layers.

The legs of the Black Hamburg are bluish black ; of the White Hamburg, flesh color. All the rest are of a slaty blue. All of the fowls are very ornamental—for beauty are not excelled.

DORKINGS.

We have accounts of five-toed fowls as far back as Ancient Greece. Aristotle mentions them, and they are supposed, by good authority, to be closely related to our now-day Dorking varieties. They are an English fowl, taking their name from the village Dorking, in Sussex, England, and are supposed to have been brought to that country by the Romans. They were first imported by Hon. L. F. Allen, of Black Rock, N. Y., in 1840. There are three varieties : Silver Gray, Colored, and White. They all have five toes, and are a good family fowl for the table and as layers. They lay a large, white egg, and make good mothers ; are very domestic ; naturally tame. The

SILVER GRAY DORKING

has a single comb. The cock has a solid black breast, black wings and tail ; silvery head, hackle, back and saddle feathers. The hens are of a grayish brown. The

COLOR DORKING

is marked much like the Silver Gray, but of darker plumage, and larger. Either the single or rose comb is admissible in the Colored Dorkings. The

WHITE DORKING

is solid white, and has a rose comb.

AMERICAN BREEDS.

AMERICAN DOMINIKES.

The origin of this fowl is unknown. It is probably one which has come up in this country from a series of selections, till it has produced one of the best breeds for eggs and for market. It is of medium size ; in color, of a bluish gray, mottled ; yellow legs.

PLYMOUTH ROCKS.

This breed of fowls is one of great popularity in this country. There has been quite a war of words as to who was the originator, but this much is pretty well settled : That it was originated in Massachusetts, about thirty-three years ago, by a cross between the American Dominique and the Black Java. They have the color of the former, and the size of the latter, with single combs. It is required that they have yellow legs and bills, although not half at the present time have legs free from the bronze tinge. It will take several years to get that right. They are large, good layers, hardy, and by many believed to be *the* fowl for all purposes. Some strains of Plymouth Rocks produce cocks of much lighter color than hens (see cut of Light Colored Plymouth Rock Cock), and no black pullets. Other strains produce cocks and hens of the same shade (see cut of trio of Plymouth Rocks), but some black hens. The latter is the best, as it is easier getting exhibition fowls, but for market and eggs no better. After a few years, we hope there will be no black pullets or light colored cockerels.

WYANDOTTES.

Formerly the American Seabrights. Its origin is unknown, but is supposed to be a cross between Silver Spangled Hamburgs and Dark Brahmas. It is marked much like the Hamburgs, and nearly of the size of the Brahmas ; rose comb ; clean, yellow legs ; a good fowl for eggs and table. This is a superior, hardy breed of fowls, and, for the farmer, compares favorably with the Plymouth Rock. Since admitted to the standard, in 1883, there has been a greater call for Wyandottes than for any other fowl.

WHITE WYANDOTTES.

(See description under head of New Varieties.)

MISCELLANEOUS BREEDS.

RUMPLESS.

A fowl whose great and only peculiarity is, that it has no tail. It throws all colors, and great variation in size and weight. It is

supposed to be a sport, bred to points. Those who breed them recommend them highly. It quite often happens that chicks will be hatched with small tails. These, if bred by themselves, will generally produce chicks with no tails.

FRIZZLIES.

The name describes a breed of fowls whose feathers turn toward the head. An odd though not handsome hen ; of all colors ; widely domesticated in Southern Africa, Java, Sumatra, and the Philippian Islands, but not much bred in America.

BLACK RUSSIANS.

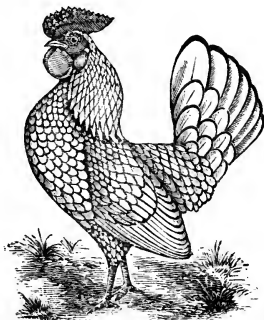
A rare fowl in this country. It has no particular merit.

CREEPERS.

Bred more in England than in this country. A good fowl for the table, and for eggs, and as a mother ; has very short legs,—in many cases not over two inches long. Not bred to any particular color.

BANTAMS.

Ths Bantams are dwarf varieties of the ordinary breeds of fowls. There are Bantams of most of the Games ; also of the Buff Cochins, White Crested White Polands, and others. They are marked like the larger fowls of which they are bantams, and otherwise like them excepting in size. The main point is to get them as small as possible when fully grown. It is not uncommon to see them of less



SILVER SEABRIGHT BANTAM.

than a pound's weight. The eggs should not be set early, in order that the cold weather of the fall may check their growth.

Besides these, there are, distinctively, the Golden Seabright, and the Silver Seabright Bantams. They take their name from Sir John Seabright, who originated the breed. The markings are, respectively, orange color or white, with the outer edge and tips of the feathers black. Rose comb, blue legs. They are very proud and gamey, and have quite a strut. The head and tail of the cock, when standing erect, nearly touch. All Bantams are bred mainly for their beauty and oddity.

There are also three varieties of Japan Bantams : The White, with black tails ; the Black ; and the Gray.

I give here a cut of Black Japanese Bantams, loaned me by J. D. Nevins, of Philadelphia :



BLACK JAPANESE BANTAMS.

NEW VARIETIES.

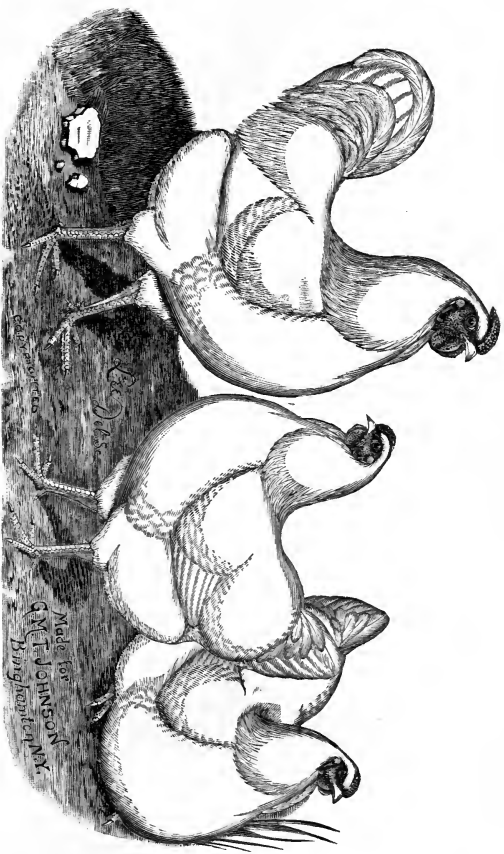
Within the past three years, other varieties have appeared which will demand recognition in the American Standard, at its next revision. Most prominent among them are the

WHITE WYANDOTTES.

This variety is a "sport" from the Laced Wyandottes. It has been observed that in not a few yards of rather light-colored Laced Wyandottes, there would now and then appear a white chick. I know of one yard, which, about the first of June, had produced twelve of them. Some breeders have preserved all these, and selected and bred from them with great care. In the spring of 1886, illustrations of the fowl were given in some of the poultry papers. There was at once a great demand for the fowls, and we may calculate on quite a boom of this variety for the next five years.

I have had a plate made of a trio of this coming variety, especially for this book. It is a good representation.

(See next page.)



A TRIO OF WHITE WYANDOTTE FOWLS.

Made for
G. M. JOHNSON
Binghamton, N.Y.

WHITE PLYMOUTH ROCKS.

These, too, first came into public notice in the spring of 1886. They are a sport from the "regulation" Plymouth Rocks, and resemble them in everything excepting color, which is pure white, and of more golden color of legs. There will be quite a demand for these fowls, also; and the race will be between them and the White Wyandottes.

MINORCAS.

There are two varieties of this branch of the Spanish family, the Black and White. They were like all the other Spanish varieties first imported into England from the coast of the Mediterranean. They have been bred, in their purity, in England, for the past fifty years, and the Blacks are to-day one of the best known and most popular varieties in the kingdom. The White Minorcas are scarce.

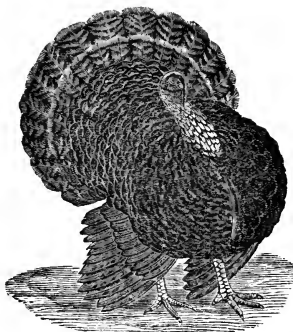
The first importation of Black Minorcas of which I have any knowledge, was made by Captain R. W. Sargent, of the steamship *Indiana*, in January, 1886. The first White Minorcas were brought by same steamer, in May, 1886, by Captain R. W. Sargent, J. D. Nevius, of Philadelphia, Pa., and F. A. Mortiner.

Mr. J. D. Nevius kindly sends me the accompanying cut of the Black Minorcas, to illustrate the variety in this book:



BLACK MINORCAS.

These are distinctively Spanish varieties, in appearance and characteristics. The head very much resembles the Black Spanish, with the exception of the white face of the latter. The face of the Minorcas is red, with white ear-lobes. They have the great laying characteristics of the other Spanish varieties.



BRONZE TURKEY COCK.

TURKEYS.

This fowl, which is such an ornament to our farm-yards, and so welcome to our tables, is a native of this country. It was first found by Cortez, in the year 1519, on his march to Cempoalla, Mexico, which he describes as a species of peacock. Prof. Spencer F. Baird, in his work on the birds of North America, says: It is reported to have been introduced into England in 1541, and in 1573 had become the Christmas fare of the farmer; that the first one eaten in France was at a banquet served at the wedding of Charles IX., in 1570.

The American turkey was found wild from Mexico to Lower Canada, but not on the west side of the Rocky Mountains; and when Wm. Penn settled Pennsylvania, the wild turkeys were said to be so large and fat as to weigh, in some cases, forty-six pounds.

The wild turkey of the Northern States bears a close resemblance to our domestic Bronze variety, although other colors are found among them. It has a more lordly style of carriage; is taller and slimmer; is keener and shyer, and altogether a grander bird than our domestic varieties. They are more or less plentiful in the Western States at the present time, and stray flocks from the farm-yards often join them, which is one cause of the odd colors in the wild flocks. They are easily domesticated, by getting the eggs from the nests and hatching with farm fowls. The wild blood adds much

to our tame flocks. It gives more of the wild air and hardiness to our birds, besides giving the flesh a wild flavor. The wild birds found in Mexico are larger, shorter legged, and show signs of former domestication.

By careful selections and good breeding, we believe we can produce larger specimens than are found in the wild state. A Mrs. Lounsbury, of Connecticut, in 1866, sent one, not quite two years old, to President Johnson, weighing forty-seven pounds. Mr. A. Johnson, of Pulaski, Ky., under sworn statement, killed one weighing fifty-five pounds. A slate colored turkey, exhibited at the Paris Exhibition, weighed forty-three pounds.

Of our domestic turkeys the American Standard recognizes six varieties, which have been produced by careful selections and breeding: The Bronze, Narragansett, Black, White, Slate, and Buff. It disqualifies for the show-room Bronze turkeys which do not weigh twenty-five pounds and sixteen pounds—the cock and hen respectively; and Narragansett turkeys must weigh twenty-five and fifteen pounds; Black turkeys twenty and twelve pounds; White, Buff, and Slate turkeys, the same as Black. The

BRONZE TURKEY,

by introducing wild blood, within a few years past, is the largest, and regarded as the most hardy, and in other ways superior to the others. Anything, off from Bronze, seems to indicate weakness. The gobbler is of solid bronze plumage, which, when fully grown, reflects a beautiful lustre. It has white spots at regular distances in the wing feathers, and the tail has a band of white on the outer edge when spread. The hen is of the same color, excepting that her breast is slightly mottled. The legs are dark, nearly black. The

NARRAGANSETT TURKEY

is a favorite in Rhode Island, where the variety was produced. They are of a mixture of black and steel gray. The body of the feather is black, tipped with gray. The legs are a deep salmon or brown color. The

BLACK TURKEY

is of solid black, with legs of a dark, lead or slate color. The

WHITE TURKEY

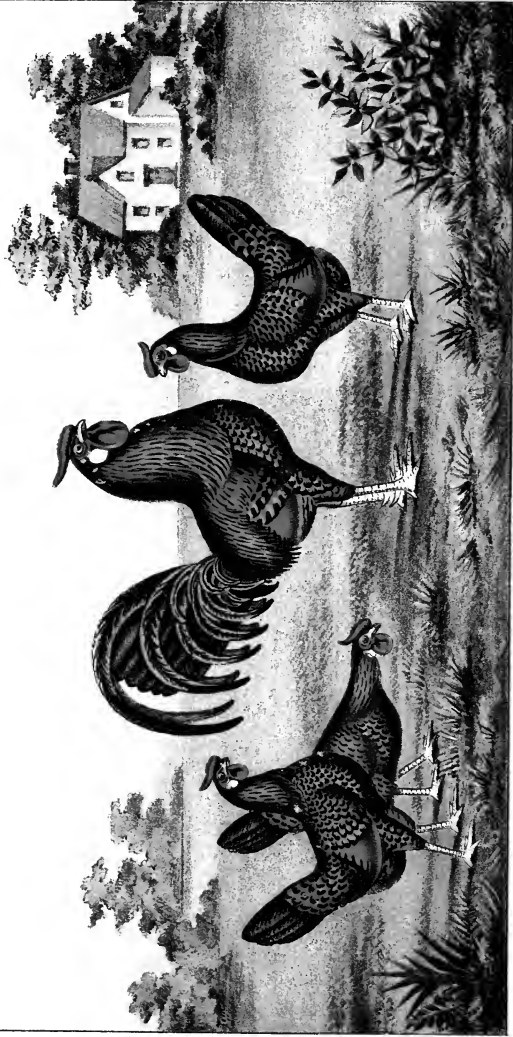
is of solid white, with the legs of a pinkish or flesh color. The

SLATE TURKEY

has a plumage of an ashy blue color; legs light or dark blue. The

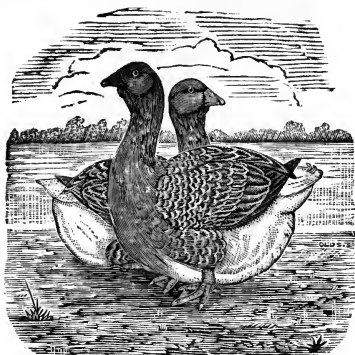
BUFF TURKEY

is of solid buff color, with legs of a bluish-white or flesh color.



BRED BY G.M.T. JOHNSON, BINGHAMTON, N.Y.





TOULOUSE GEESE.

GEESE.

Of the Goose we have a history further back than of any other fowl. They are mentioned by Homer as domestic poultry, and were kept at the capitol at Rome, 388 B. C., as sacred to Juno. There are three varieties of prominence: The Toulouse, Embden or Bremen, and the China (Brown and White). The Egyptian and African are not much kept in this country. The

TOULOUSE GOOSE

is a large gray variety, very heavy bodied; when fat, almost dragging on the ground. They are sometimes made to weigh thirty and thirty-five pounds. Many prefer this to all others.

EMBDEN OR BREMEN GOOSE.

A large, white goose from Holland. The first ever brought to this country were imported by John Giles, of Providence, R. I., and Colonel Samuel Jaques, of Medford, Mass., some sixty years ago. This variety is preferred by many, although not so heavy as the Toulouse. They will often weigh forty-five and fifty pounds to the pair. The

CHINA GOOSE

has a large knob at base of bill. Very noisy; not desirable. The

CANADA OR AMERICAN WILD GOOSE

is not of the same species as the others. They will cross with

other varieties for one generation only. The eggs of a half-Canada goose will never hatch. They are very ornamental, and often domesticated, but do not lay till two years old.

•DUCKS. •

The principal varieties of ducks are: The Rouin, Pekin, Aylesbury, and Cayuga. The Muscovy, Call, Black East Indian, and Crested White, are much their inferiors, and but little bred in this country. The

ROUIN DUCK

closely resembles the Wild Mallard, excepting that it is larger, which is supposed to have been brought about by domestication. The drake is much handsomer than the duck. Its head and neck are of a lustrous green, with a ring of white round the lower part of the neck. The breast is a rich purplish brown. The under part of body and sides, a beautiful soft gray color. The tail dark brown or black; wings brown and gray, with a greenish-purple bar across them. It is a handsome fowl. The duck is of a roan color. Each feather is penciled with gray and brown. They are very hardy; do not care much for water; are easily reared in the home yards, same as chickens, and are good layers of large eggs. In size they are about the same as Pekins, weighing from twelve to eighteen pounds.

THE PEKIN DUCK

has had a great run for the past thirteen years, and is still the general favorite. It was first brought to this country from Pekin, China, by Mr. James E. Palmer, of Stonington, Conn., and landed in New York on the 14th day of March, 1873. They are pure white, and very handsome; hardy, and care but little for the water; good layers; will weigh from twelve to eighteen pounds to the pair. One of the first importation laid 125 eggs the first season after its arrival, and 185 the next. Their eggs are as large as the Rouins', and they make a good table fowl. Mr. Palmer has made a second importation. The

AYLESBURY DUCK

derives its name from the town Aylesbury, England, where many are raised every year for the London market. John K. Fowler, a prominent breeder of Aylesburys, says: "It is not uncommon at all to see around one small cottage 2,000 ducklings, and it is computed that upwards of 20,000 pounds per annum is returned to the town and neighborhood in exchange." They are prolific layers, sometimes laying 150 eggs in one season. They will weigh from twelve to fifteen pounds to the pair.

CAYUGA DUCK.

An American variety, supposed to have originated near Cayuga Lake, N. Y., by a cross of the Wild Black or Buenos Ayres duck and the Wild Mallard, but nothing certain is known. Its plumage is black, with a white collar around its neck. It is a profitable duck ; good layer ; quiet in its habits, and nearly as large as the Rouin.

MUSCOVY DUCK.

The name is given to this fowl on account of the musky odor of the skin. There are two kinds: The White, and the Blue-Black and White. Another peculiarity is, that the head is nearly bare of feathers, and its red face gives it an ugly appearance. The drake is much larger than the duck. He is quarrelsome, and ugly in disposition. They are good on the wing : consequently hard to confine. They are poor layers, and not very good eating after the first year; on the whole, not a desirable fowl.

BLACK EAST INDIA DUCK.

A small, handsome, black variety. The name does not indicate its origin. The British Zoological Society received its first specimens from Buenos Ayres. The flesh is prized very highly. They take long flights, and will sometimes stay away from their coops for days.

CALL DUCKS

are, like the preceding, a small variety. There are two kinds—the White, and the Gray. As their name indicates, they are very noisy.

CRESTED WHITE.

Is a duck of white color, with a heavy crest on the top of its head.

GUINEA FOWLS.

There are two varieties : The PEARL, and the WHITE. The former are the most common. They are natives of Africa. Some poultrymen raise them to protect their poultry from hawks. It is claimed they will not disturb a yard where the voice of the Guinea owl is heard.



PART V.

POULTRY ENEMIES.

The depredations of the chicken thief—whether man, beast or bird—sometimes cause a great deal of unpleasantness in the family. I have not words to express my contempt for the person who will so completely put himself on the level of the skunk as to prowl round his neighbor's outhouses at night, and carry off his fowls. So we will pass him, and discuss his greatly superior fellow tradesman, but a mean and sneaking, ill savored thief—

THE SKUNK.

Dark and rainy nights are more promising for the appearance of skunks than others. They are very bold, and would be social—if others were so disposed. They prowl around nights, eating every sort of refuse meat, scraps, etc., to be found. These not handy, they will eat the chickens in their coops, never carrying anything away with them; but always remembering where they obtained their last meal, will be quite sure to come to the same place on the next night,—which makes it easy to trap them. A steel trap set in the place of its last depredations, will quite likely hold the thief in the morning—and the catcher must explain to all of his neighbors what is the cause of all this unpleasantness! A box-trap is best, as the skunk will not be offensive till hurt or frightened. This immersed in water till the animal is dead, is a safe and easy way of killing it. In a locality of skunks, the chicks should be shut up every night. A board set up in front of a coop will generally keep them out.

THE RAT.

Rather the most annoying in villages, as they will hide under any old barn, shed, floor or wall, from which they will make their raids, day or night, and prey on the chickens till nearly as large as partidges. A cat which can be trusted, is an excellent exterminator. Poison, so set that other creatures can not get it, is about as good

as anything. Either the coop must be set at a distance from their hiding-places, or war must be waged on the rats.

THE FOX.

Where chickens or turkeys wander a long way from home, or on back farms, the fox is the most troublesome. A good dog and gun are the best arguments to convince them that they are out of place.

THE WEASEL.

A dead fowl under the roost in the morning, is the only evidence that a weasel has been there. It works by crawling on the roost, and tapping a vein and sucking the blood. One of my correspondents says he killed his weasel by sprinkling oil of anise and strychnine on a piece of fresh and bloody meat. I wrote him, asking him what was the good of the oil of anise. He replied, that he did not know,—only it got the weasel.

THE HAWK.

There are two kinds—the large hen-hawk, and the small pigeon-hawk. If not disturbed, they will get to be very familiar, and never forget where the chickens ramble. A good gun is recommended, but it is hard to get within shooting distance of them. I have known a steel trap with a dead chicken tied on for bait, to catch them.

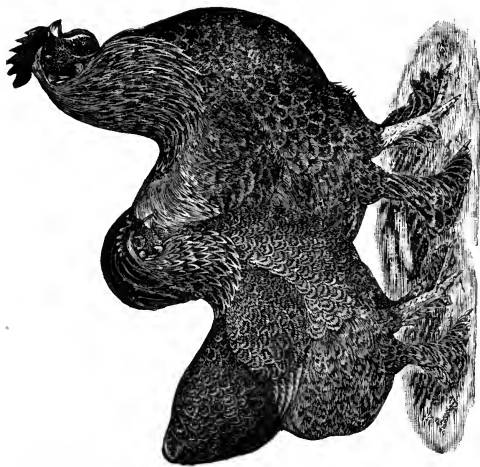
THE OWL.

Not so troublesome as it is handsome. This bird always comes around in the night, and commonly takes chickens which roost out in trees. The owl always lights before it attacks a fowl. This suggests the steel-trap. I was once shown a trap which a farmer said was sure, and in which he caught them. Near where the owl appeared last, he erected a pole, on the top of which he had fastened a steel-trap, with a piece of chicken as bait. The chicken was there in the morning, and the owl was there, too!

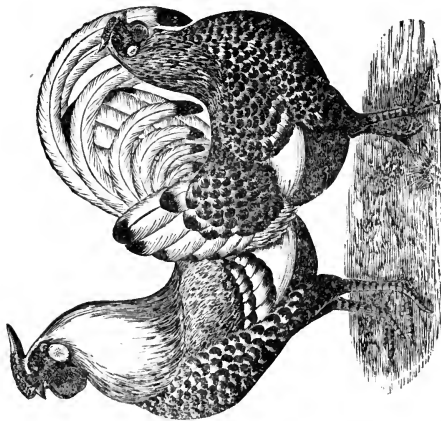
THE COON.

Not our colored Southern brother, but the veritable coon of the woods. A friend of mine in the eastern part of the State of New York said to me, "When you get out your next edition, you must not leave out the Coon from the list of poultry enemies. They are the worst thieves we have. They will come in the hen-house, or climb up the side of the barn, run along on the roost, and catch the fowls."

We should think they could be easily trapped, if they are obliged to enter the house by a certain way, but have never heard of any certain remedy.



PARTRIDGE COCHIN FOWLS.



SILVER SPANGLED HAMBURGH FOWLS.

PART VI.

MISCELLANEOUS SUBJECTS.

RECIPES.

CARBOLIC ACID OINTMENT.

One fluid ounce, or one tablespoonful, of acid to one pound of lard.

Very healing and cleansing. Used for driving vermin from chickens and fowls.

CARBOLIC ACID WASH.

One fluid ounce of acid to one gallon of water.

Used as a disinfectant in washing roosts, etc., for cleansing against disease and vermin.

DOUGLASS MIXTURE.

Sulphate of Iron.....	½ pound.
Sulphuric Acid.....	1 ounce.
Water.....	2 gallons.

This added to the drinking water of all fowls and chicks, in the proportion of one teaspoonful to a pint of water. The water will assume a rusty appearance, but that is immaterial. This serves as a bracing tonic, and will, in a measure, guard against roup, gapes, and diseases of the bowels. It is especially good during moulting season. The mixture can be made and set away in bottles or glass jars, to be used as wanted.

POULTRY CONDITION POWDERS.

Pulverized Ginger.....	1 pound.
Pulverized Licorice Root..	1 pound.
Pulverized Blood Root.	1 pound.
Pulverized Flax Seed.....	1 pound.

A tablespoonful of this every other day, when a stimulant is needed. Should be given in the spring, and during moulting.

STIMULANT.

Ale is an excellent stimulant. It works like a charm on chickens, young turkeys and fowls, weak, languid and wanting appetite. They readily eat bread soaked in it; if not, then open the mouth and pour down a quantity, according to size and age.

TONICS.

Lewis Wright, in his Illustrated Book of Poultry, recommends the following tonics:

No. 1.		No. 2.	
Licorice.....	2 oz.	Cassia Bark.....	1 ½ oz.
Ginger.....	2 oz.	Ginger.....	5 oz.
Cayenne Pepper.....	1 oz.	Gentian.....	½ oz.
Anise Seed.....	1 ½ oz.	Anise Seed.....	½ oz.
Pimento.....	2 oz.	Carbonate of Iron.....	2 oz.
Sulphate of Iron.....	1 oz.		
<i>Powder and Mix.</i>		<i>Powder and Mix.</i>	
No. 3.		No. 4.	
Peruvian Bark.....	2 oz.	Cascarilla Bark.....	2 oz.
Citrate of Iron.....	1 oz.	Anise Seed.....	½ oz.
Pimento.....	2 oz.	Pimento.....	1 oz.
Cayenne Pepper.....	1 oz.	Malt Dust.....	2 oz.
Gentian.....	1 oz.	Carbonate of Iron.....	1 oz.
<i>Powder and Mix.</i>		<i>Powder and Mix.</i>	

No. 1—Best for sudden colds. No. 2—For cold and wet weather, and young turkeys. No. 3—A restorative after long journeys, exhibitions, etc. No. 4—Where a continuous use of tonic is required for general debility, and the like. Only enough of either should be used to give the food a slight characteristic taste.

WATER-LIME PAINT.

Take lime-water—the stronger the better. Add salt to make quite a brine of it. Mix in water-lime to consistency of paint. If you can use half skim-milk in place of half of the lime-water, it will add body and durability to the paint. Apply with white-wash brush.

FALSE NEST-EGGS.

During all seasons of the year, and especially in winter, a false nest-egg is better than a real one. It is easily whittled from a large piece of chalk. Or, take an egg, break a small hole in both ends, and blow the contents into a bowl; then fill the shell with plaster-of-paris, and turn in water. It will harden, and be very solid.

CARBOLIC NEST-EGG.

Mix plaster-of-paris in the form of an egg, and when dry, drop a little carbolic acid on it. This can be done whenever the egg loses

its peculiar, acid odor. Such an egg as this will do much to keep the nests and hens free from vermin. It will not freeze, or present any inducement for the hens to eat eggs.

TO PICKLE EGGS.

During the summer, eggs bring a small price,—perhaps ten or fifteen cents per dozen. If they can be preserved till winter, when they are worth thirty or forty cents, it is getting a big percentage on the money invested. I think the best recipe is the following :

Lime.....	2 quarts.
Salt ..	1 quart.
Cream Tartar.....	3 ounces.
Boiling Water	8 gallons.

Stir well, and let cool. It is immaterial whether you remove sediment or not, after about two weeks. Drop the eggs, as gathered, in the pickle (only fresh ones), and keep covered from the light. Eggs will keep in this way six or ten months. Another good way, when they are to be kept only a few weeks, is to pack them in salt, and keep covered.

HOW TO PACK EGGS, FOR HATCHING.

The great end is to so pack them that they will reach their destination safely, and hatch as well, if possible, as at home. Another consideration is, to pack them as light as possible, as the express charges depend much upon the weight. There are different ways of packing, but I believe the best and simplest is, to wrap each egg in paper, and pack on end or side, with bran in a basket. The bran is very elastic, and if placed about an inch deep in the bottom, and half an inch on the sides, and one-quarter inch between eggs in the same layer, they will carry safely.

I have had no trouble sending to California, and they hatch well. After well packed, a cloth cover is sewed on, or a thin board cover is wired on. The address is written on a card or paper, and pasted or sewed on the cover. There should be printed or written in large letters, words to this effect : *EGGS FOR HATCHING!*

TO FATTEN POULTRY.

Shut the fowl in a coop by itself. Keep fresh water by it. Give cooked food three times a day—as early in the morning and as late at night as it will eat. Give all it will eat up clean. Leave none to get sour. Hang a cloth or carpet over the coop for two or three

hours after each meal. The fowls keep quiet in the dark, and fatten faster. Buckwheat, Indian meal and wheat middlings are good. Let all food be cooked. Give a little green food, to keep bowels in order. In short,—perfect quiet, warm quarters, and plenty of good food. The following, from the *Iowa Register*, should be carefully read by all preparing fowls for market :

“Generally farmers do not prepare their turkeys in a proper way for market. Neither turkeys nor chickens are fit to eat taken right from the barn-yard manure pile, nor from following after fattening cattle. Fowls partake largely of the food they eat, in taste and smell. This is well illustrated by the popularity of the canvas-back ducks in the neighborhood of Baltimore and Washington. In that region there is a large quantity of wild celery, which this variety of ducks eats, and it gives their flesh that peculiar flavor which makes them so popular with the lovers of canvas-back ducks. It is only in that particular region, or in other places where the wild celery grows, that these ducks are any better than other choice kinds. Turkeys, chickens, geese and ducks, can have their flesh flavored with celery, or any other highly flavored articles which they will eat. So can they be flavored with the droppings of cattle and other domestic animals. No poultry, for ten or fifteen days before being killed, should be allowed to eat anything impure in taste or smell, if you would have delicious eating.

“Some time before taking to market, all turkeys for Christmas should be put in a clean enclosure, and fed on clean, rich food, and pure water or sweet milk. Then they would be fit to eat, and persons who could have full assurance that they were all right, could afford to pay double prices for them.”

DRESSING AND PACKING POULTRY FOR MARKET.

A correspondent of the *Farm and Fireside* furnishes the following directions for preparing poultry for market :

“As much, if not more, depends upon the manner of killing poultry, as on that of dressing it, to have it fit for market. Too much caution cannot be used in this branch of the business.

“The French mode of killing we think far the best, as it causes instant death, without pain or disfigurement, and is simply done by opening the beak of the fowl, and with a sharp-pointed and narrow-bladed knife, making an incision at the back of the roof of the mouth, which will divide the vertebræ, and cause immediate death, after which the fowl should be hung up by the legs till bleeding

ceases, and picked while warm. The flesh presents a better and more natural appearance than it does after the old-fashioned way of scalding. Fowls should always be allowed to remain in their coops without food at least twenty-four hours previous to being killed, as the flesh will keep longer, and present a better appearance in the market.

All poultry should be thoroughly cooled before packing. Then provide boxes—for they are preferable to barrels—and place a layer of rye straw, that has been thoroughly cleansed from dust, on the bottom. Commence packing by bending the head under the body



FIGURE 1.

(see figure 1); then lay the fowl in the left-hand corner, with the head against the end of the box, and the back up; and continue in the same manner until the row is filled. Then begin the second row in the same manner, letting the head of the bird pass up between the two adjoining birds, which will make the whole solid and

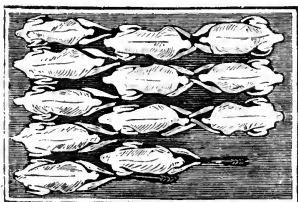


FIGURE 2.

firm. (See figure 2.) In packing the last row, reverse the order, placing the heads against the end of the box, and letting the feet pass under each other, and fill the spaces with straw. Over this layer place enough straw to prevent the next layer coming in contact with it; then add other layers, packed in the same manner, until the box is filled. Care should be taken to fill the box full, in order to prevent any disarrangement. To those having extra fine

poultry to send to market, we would recommend wrapping each fowl before packing. This will prevent dust and straw adhering to it, and will add much to its appearance. The box should have the initials of the consignor; the number and variety of contents; as well as the name of the consignee, marked on it."

TO FIT FOWLS FOR EXHIBITION.

When competing for prizes, the fowls are put in light and tasty coops, in pairs and trios, as the Society may direct. The coops are generally open at the top and in front, with exception of slats; and a slide-slat or two in front, by which to put fowls in and out. This is to let in the coop as much light as possible, that the fowls may show off well. Of course, the first point is to get superior fowls. The next is, to have them appear well. The cock and hen should match in the pen—that is, be of the same shade of coloring, of proportionate size, and about the same age. They should be clean, and their feathers smooth, none pulled out, especially such prominent ones as tail or wing feathers. Many a first-class fowl has given up his medal to his inferior, for the reason that he did not show up well. They should be somewhat used to the coop, and not wild, that when the judge takes them out and handles them, he can get at their true merits, and that they may act natural.

Fowls designed for exhibition should be put in clean and comfortable apartments by themselves, where they will be quiet for a week or two before the exhibition. If necessary, they should be washed, and allowed good time to dry, in clean apartments. For feed, whole grain is the best. Let them be in good order, and not over-fat. Sunflower seeds are good to feed them, with other grain, for two weeks before exhibition, but they have to learn to eat them. If sunflower seeds are not convenient, give the hens oil meal or cotton-seed meal, mixed with Indian meal and wheat middlings, in the proportion of one-fourth oil meal to three-fourths other meal, once a day. This tends to make them vigorous, active, and hold up their heads; feathers shine and lie smooth. The judge will pass upon every part of the fowl—head, comb, legs, wings, tail, condition, symmetry, etc. A perfect fowl is allowed one hundred points of excellence. A certain number of points will be allowed to the comb, say five; a certain number, say seven, to wings; and a certain number, say ten, to legs. (With different kinds of fowls these numbers will be proportioned differently.) These whole numbers added together make one hundred. If the comb be defective, —perhaps ill-shaped, twisted or lopped,—one, two or three points

will be taken off, according to the seriousness of the defect ; so with all parts. The points of excellence left for each fowl are then added up, and the one whose number is the highest, ranks best. I have never yet heard of a fowl that possessed one hundred points. Many good fowls fall below ninety. It is a superior fowl that will score ninety-five points.

Fowls of some varieties, that will score ninety-eight and ninety-nine points, are sold now-a-days for seventy-five and one hundred dollars apiece. There is need of great care, that the changes of condition of the fowl to the coop, and at liberty, do not work against his health. Many a good fowl is lost just after exhibition.

CAPONS, AND HOW PRODUCED.

This subject is receiving more attention every year, and the operation of caponizing young cockerels is practiced in some localities to quite an extent ; but we are very slow and backward yet. There is no reason why a hundred should not be able to perform this change, where there is one now. The demand is great. Every large town furnishes market for Capons, at nearly double the prices paid for other poultry ; and we believe that almost every one who is at all handy with his fingers, and careful, can do the work successfully.

In our fourth edition, we gave directions for the operation. One party, after buying the book, and working from the directions, wrote me, asking if I supposed he could find market for them,—that he could produce thousands.

The right age at which to perform the operation is at three or four months. The young bird should not previously have been allowed to pay any attention to the other sex, as this causes the organs to grow, and so makes the operation more difficult.

Before trying on a live fowl, it is well to operate on a dead one, and before the feathers are taken off. This can be repeated on any number of chicks, till the operator gets confidence to take a live one. Next select a fowl intended for killing, and if it dies in the operation, it will be caused by bleeding to death, which will not injure it for cooking. Two persons—one to hold the fowl, and the other to operate—can do better than one alone.

Lay the fowl on side, with its wings drawn over its back. Remove the feathers from a spot about the size of a dollar, near the hip joint, and on a line between the shoulder and the thigh ; next draw the skin back—so that after the operation it will cover the wound between the ribs—and make an incision between the last

two ribs, about an inch and a half long; between these, place a spring, previously prepared for the work, which will hold the parts open enough to allow working between them. Here is a point where slim and deft fingers are most needed. Some say that, with the handle of a teaspoon and a pair of tweezers, an adept person can successfully operate; but I consider instruments made especially for the business quite convenient, to say the least. With the handle of a spoon push the intestines to one side, till the testicle is visible, enclosed in a thin skin; with a sharp hook tear open this skin; next seize the testicle with a pair of concave forceps, or any other instrument with which we can pull the member away from the back-bone. Care should be taken not to rupture the blood vessels near the organ, or injure the intestines. Operate on the other testicle in the same manner. Then let the parts back to their normal position. It is not necessary to sew up the skin, as it is loose and will grow together.

Previous to the operation the fowl should not be fed for thirty-six hours, that the intestines may be empty. After the operation, feed lightly for a few days, with soft, cooked food. Capons will grow till a year and a half old, and will get nearly the size of turkeys. Their flesh is very tender and sweet, and as much the superior of the ordinary fowl as the flesh of a steer is superior to that of a bull.

Some are deterred from trying this on account of the expense of the instruments. I would recommend that a person of small and limber fingers practice first on dead fowls. Follow the directions as here given till instruments are needed; then use the fingers, and contrive such instruments as one would think would do the work. The object is to take out the testicles. That done, that is all there is of it. I would observe, that no particle of either testicle must be left. If there is, the fowl after a while will begin to crow,—which will be proof positive that the work was not thorough. This fowl is what is called a Slip.

Slips command a better price than ordinary fowls, but they are not Capons, and will not command the price of Capons.

CROSS-BREEDING.

When fowls are kept simply for eggs and market, it is often of great advantage to cross them. This often adds size and vitality, and increases egg production. Some, however, are not as good as either parent stock,—so that only by experimenting can we know which will be of advantage to cross.

A fowl is often called for with the size of the Light Brahmas, and laying qualities of the White Leghorns. A cross between these breeds will produce a white fowl not quite so large as the Brahmas, and more like the Leghorns for laying.

A Black Spanish cock with White Leghorn hens will produce an excellent laying fowl. The cockerels from this cross will be marked solid white, with flesh-colored legs. The pullets will be white, with now and then a black feather; the legs blue.

A cross between Plymouth Rock and White Leghorn produces a slaty blue fowl. Cockerels have flesh-colored legs; pullets have blue legs. They somewhat resemble the Andalusian fowls. I do not consider them equal to either the Plymouth Rocks or White Leghorns.

A cross of Plymouth Rock and Partridge Cochins very much resembles the Plymouth Rock. It has bright yellow legs; some chicks have clean legs, and some feathered legs; a good sized fowl.

A Brown Leghorn and Silver Spangled Hamburg shows color of the Leghorn, but manner of marking of the Hamburg. It much resembles the Golden Spangled Hamburg. An excellent variety for eggs, and more hardy than the Hamburgs, pure.

These are crosses which have come under my own eye. It is interesting to see how the blood of one fowl will manifest itself in one way, and the blood of another in quite a different way. When two markings or characteristics clash, the weaker must give way to the stronger, unless they are about equally strong. The Dorking varieties crossed with others, never forget to put on the fifth toe, showing that it is a characteristic from many generations back. In the cross between the Black Spanish and White Leghorn, I was surprised to see how the black feathering had to give way to the white, but the Spanish held on to the blue legs—never a yellow leg. In bringing new blood into any yard, the chicks want to be watched carefully, to see in what way the particular cross manifests itself. If to the detriment of the parent stock, it will not pay to let it go any further.

QUALITY OF EGGS.

We often hear it stated that there is a great difference in the quality of eggs of different breeds of fowls. There is certainly a great difference in the quality of eggs, but more depends on the treatment which fowls receive than on blood. We know well that the food which goes to make the egg—perhaps within twenty-four hours—must carry with it, to some extent, its own inherent qual-

ities, good or bad. Not only does our own judgment tell us so, but actual experience corroborates the fact. If we will feed a laying hen onions, we can taste them quite strongly in the egg; the same as milk from a cow that is fed on cabbages or turnips, will taste of them. So it is plain that eggs that are from stale, unhealthy or rotten food, will be very poor eggs, and although fresh, will be unhealthy to eat, while eggs from clean grain and grass, and fresh meat, with pure water, will be of much better quality.

There is another phase in which the assertion that there is a difference in eggs is true, I think. We know that cows which are noted for great flow of milk, are also noted for giving poor milk,—the Ayrshires, for instance; while the Jerseys give small quantity, they give much richer milk. Is it, then, unreasonable to believe that eggs from fowls,—say the Asiatics, which lay only twelve or twenty eggs before they rest a week or ten days, are richer than eggs from fowls such as the Leghorn and Hamburgh varieties, which will lay forty and fifty before they stop? To me it is not. But when a person says that the Leghorns, or any one variety, lays a better egg than any other variety of fowls, we can conclude he has them to sell. However, I doubt not some are perfectly honest in such belief, but I think they are mistaken.

INCUBATORS.

In my fourth edition I said on this subject, “I receive many inquiries like these: ‘What do you think of them?’ and, ‘What kind is the best?’ I will answer both of these questions as well as I can. There is hardly a subject that I dislike to discuss as I do this one of Incubators, and for the reason that I fear I may do them wrong. But I can say a good word for the old speckled hen. I have known her a long time, and I can give her a good recommend:

1st, *She is cheap!* 2d, *She is trusty and reliable!* 3d, *She will bring off a large percentage of chicks!* If as much can be said of Incubators, they can be pronounced a success.

The natural course is for the hen to hatch her own eggs, and care for the little ones. It is a very nice thing to furnish a substitute. If we try to do it, we must get something that is cheaper than the time of the hen, or, in a business point of view, we fail. And supposing the machine to hatch every egg: One whose capacity is one hundred eggs, costs about thirty-five dollars; and after chicks are out, they have no mother, and require much attention of some one. To hatch these eggs in the natural way would take the time of eight

hens, which would cost four dollars ; and they will mother them till they need no mothers. The hens will then lay a dozen eggs, and after that are worth six dollars in market."

Since writing the above, three years ago, I have had quite an opportunity to observe more on this subject, and will, for the lack of room, give the results, without many explanations :

1st. It is a very well settled fact that chickens are hatched by Incubators in quite large numbers, and with the attention of a good operator, quite a fair percentage of eggs will hatch ; but I wish to be understood to say, that this is with a well-made, self-regulating machine, and operated by a person who understands it.

2d. There are well-made machines (some more simple than others), which will fall into the hands of poor operators, and not produce a good hatch. The result will be, the machine is condemned, whereas it is not at fault.

3d. There is a class of machines which are made on right principles ; but to supply the demand for a low-priced Incubator, the manufacturers have used the cheapest and poorest materials, and put them together in a very hasty manner. They frequently require more or less fixing up, and are liable to fail in the midst of a hatch ; and at the best, do not last long.

4th. There are many which are not made on scientific principles, and can not be made to hatch well, even with the best of operators. They are downright swindles ; and here I wish to say, that the system of selling, without any kind of a warrant, to any one who may order it, a machine which requires excellent judgment and careful handling and very patient attention, is wrong. It opens the way for all sorts of frauds—in the name of Incubators—to keep up a pretentious rivalry with really worthy machines. I think none should be sold where the purchaser can not afford to have an agent come with it, set it up, run it in his presence, and teach him to do so ; and the company should agree to do this, and warrant the machine, to a certain extent. A person who cannot rock a cradle without turning it over, will order an Incubator, and then handle it as he would a fanning-mill, cook or freeze a lot of eggs, and—condemn the machine !

Hence I would say—and I know I am ahead of the times—when the Incubator can be sold, set up and run, on the same conditions that sewing-machines are, they will do better and be used more. There is hardly a community where people do not point to some idle machine, and pronounce Incubators "no good." It will be greatly to the interest of the manufacturers and the public, to in-

augurate this system, and give the genuine, well-made, self-regulating and good hatching Incubators a boom. The demand is strong enough, but the supply and terms and prices are poor.

THE HOME-MADE INCUBATOR.

There are many who like to try this "hatching by steam," but can not afford, or their demands do not require, so expensive a machine, and therefore desire to make one of their own. This may do very well for the person who wishes simply to try it, for the "fun of it," but they are very rarely profitable, as they require so much attention, watching the thermometer, etc. I do not approve of them for business. It must be understood that the making of one is a very particular job, and demands first-class workmanship.

In my fourth edition I gave directions for making, as I do below. Some parties have written me that they could not make them work well; others, that they could. Probably all depended on the mechanical tact of the maker. I give here one letter which I received:

RIX MILLS, Ohio, May 29, 1885.

Mr. G. M. T. Johnson, Binghamton, N. Y.:

DEAR SIR:—I was to let you know about my Incubator, made according to the directions in your PRACTICAL POULTRY KEEPING. I made it large enough for twice the number of eggs, which is 400, and put in two No. 1 burner lamps. The machine was put in a small granary, and when the sun came out hot, it run the mercury up to 110½, the first day after dinner; and three times after that, it run up to 108, at noon. I could regulate it splendidly at night, but not in the daytime without considerable trouble, but had it from 98 to 105, most of the time after I got up to it. I did not get much of a hatch at all; but I could not expect it after keeping the heat so irregular. But after all, I got twenty-five or thirty chicks, and they were next the board, on the outside. So that would show that it had been too warm. I found seventy or eighty chicks in the rest of the eggs on the outer edge, and they were dead in the shell, but looked large enough to commence to pick through. This I cannot understand. I hope you will give me your views on this subject,—why, after being ready to hatch, they should then die in the shell.

* * * * *

Respectfully,

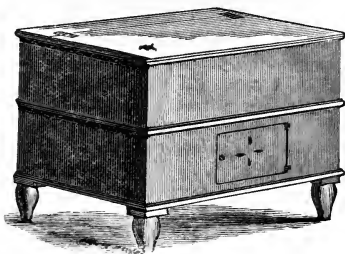
R. E. MOOREHEAD.

I am of the opinion that the cause of the chicks dying in the shell was, the want of moisture. I think this party did pretty well, considering the changeable temperature of the room in which his machine stood. The room should be of very even temperature. I am told that the cellar is a good place in which to run an Incubator.

The following are the directions for making the Incubator, as given in my fourth edition. The article is taken from the *Youths' Companion* :

"Have a pine case made, somewhat like a common wash-stand (see figure 1), without the inside divisions.

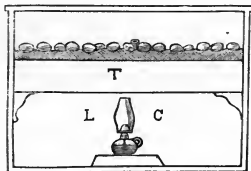
FIGURE 1.



INCUBATOR (CLOSED).

"About a foot from the floor of this case, place brackets like those in figure 2, and on a level with these screw a strong cleat across the back of the case inside. These are to support the tank. The tank should be made of galvanized iron, three inches deep, and otherwise proportioned to fit exactly within the case, and rest upon the brackets and cleat. The tank should have a top or cover soldered on when it is made. At the top of this tank, in the center, should be a hole an inch in diameter, with a rim two inches high ; and at the bottom, towards one end, a faucet for drawing off the water.

FIGURE 2.



INSIDE OF INCUBATOR—FRONT SECTION.

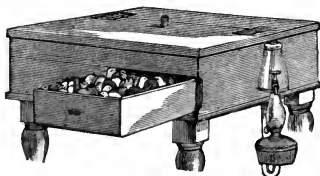
(T—Tank. L C—Lamp-Closet.)

"When the tank is set in the case, fill up all the chinks and cracks

between the edges of the tank and the case with plaster-of-paris, to keep all fumes of the lamp from the eggs.

"Fill the tank at least two inches deep with boiling water. To find when the right depth is acquired, gauge the water with a small stick. Over the top of the tank spread fine gravel, a quarter of an inch thick ; over this lay a coarse cotton cloth. Place the eggs on the cloth, and set a kerosene safety-lamp under the centre of the tank. The door of the lamp-closet must have four holes for ventilation : otherwise the lamp will not burn. The lamp-closet is the space within the incubator, under the tank. Turn the eggs carefully every morning and evening, and after turning, sprinkle them with quite warm water. Two thermometers should be kept in the Incubator—one half-way between the centre and each end. The average heat should be one hundred and five degrees. If the eggs do not warm up well, lay a piece of coarse carpet over them. If they are too warm, take out the lamp, and open the cover for a few minutes, but do not let the eggs get chilled. If they should happen to get down to ninety-eight, or up to one hundred and eight, you need not think the eggs are spoiled. They will stand such a variation once in a while ; but, of course, a uniform temperature of one hundred and five degrees will secure more chickens, and they will be stronger and more lively. In just such an Incubator as this one I have described, I hatched over two hundred chickens two years ago.

"For those who are ambitious to try top heat, the same sort of a tank is required, but a boiler must be attached at the side, with an upper and lower pipe for circulation. Any plumber can attach the



TOP-HEAT INCUBATOR—ON TABLE.

boiler ; and the faucet must be at the bottom of the boiler, on one side. The drawers containing the eggs should slide beneath this tank. A stand for the lamp should be screwed to one end of the case, in such a position as to bring the lamp under the boiler. (See picture.) This incubator can be cooled by raising the lid, turning down the lamp, and pulling the drawers part way out.

"In both incubators, while the eggs are hatching, sprinkle them two or three times with quite warm water."



FORM OF TANK.

J. M. BAIN, of New Concord, Ohio, says: Make your own incubators; and gives long directions as to how to do it, and adds: "We will send all the above directions and information, nicely bound, for two dollars, cost price. There is nothing to prevent your making hundreds of dollars in a few months at this business."

Without this book, of course, the information as to how to build is good for nothing. Two dollars are sent him, and in return is received a little pamphlet of *26 pages!* In this book he gives directions which require a person's attention every ten or fifteen minutes, day and night, for three weeks; and adds, that we must not be discouraged if we have to try three or four times before we get any chickens. He says: "The first four times that I filled the incubator with eggs, I raised only one chicken!" That is encouraging, indeed! Why did he not give us that information before receiving the two dollars? There is a good deal more of nonsense in this two-dollar book of twenty-six pages, but I cannot afford space to notice it, further than to caution my readers against a first-class fraud.

A WORD TO BEGINNERS.

I am often in receipt of letters of inquiry from those contemplating going into the business of fine poultry breeding. I will answer some of their questions here, which may be acceptable to others:

I. Begin with only one variety, You, of course, want to breed for success, good stock, and pure, healthy and clean, and enjoy the business. Each variety of fowls needs at least one warm and commodious building,—not necessarily large; one good yard; two or three separate apartments for extra cocks. It would not do to let your business depend upon the life of one. One or two separate apartments for sitting hens and young chicks. You will need separate apartments for the larger chickens, that they may not pick and tread on the wee ones. It is often the case that in the fall cockerels will need a separate yard by themselves, that they may not worry

the hens and pullets. I make it a practice every fall, to put my cockerels in a yard by themselves, with none of the other sex to fight over, and they will be quiet till spring. It economizes the yards. But it will not do to bring in a stranger. The others will pitch on him, and soon be fighting among themselves. The happy family is then broken up. If you have only one variety, you do not have to stand so strict guard against mixing. You can, at will, give the fowls the range of the yard. You can raise the whole number that the grounds will accommodate, of one variety, and cull down to the acceptable birds, and in the fall have some that you can be proud of. With two or three varieties, it will require a good deal of watching. If the Houdan cock should get in with the Leghorns, but for a few minutes in the spring, your yard would be ruined for the season, and your labor lost. You could no longer warrant them. Again, the number of chicks will be divided between these varieties, and when you come to cull out the inferior ones, you will find you have not one good yard of either variety. The cocks will get to fighting, and injure each other,—perhaps your finest specimens; and in the fall when you come to look over your stock, and figure up the first cost of good fowls; your expense in building, and the feed; your own time and unpleasant labor fighting diseases, etc.; and then when you look at your few good birds, you will be ready to sell out. With one variety, you can at the end of the year figure up the loss and gain; and knowing something of the duties, you can tell better what to do the next year, and your experience will suggest many things that will help you, if you should wish to add to the number of varieties.

2. Keep only good stock. It pays best. It will take a number of years—probably longer than you will live—to get good stock from poor. Like produces like. It is better to get good stock from reliable breeders, at high prices, than poor stock at any price; but it is often the case you can get just as good at low prices. Bear in mind that because prices are high, it is no guaranty that the stock is good. Let the man of whom you buy be a reliable breeder. In selecting, it is better to take fowls that are inferior, and culls from first-class birds, than to take first-class birds from poor quality of fowls. In all probability the chicks will take back to the original stock, and be of the quality of the line from which they sprang. One year I bought a Houdan cock (a fine bird), and hens equally as good, from different parties; but out of a lot of fifty chicks, could not get five good ones. They evidently took back to the parent stock. I also sold one of my neighbors some of my Leghorns,

which I was going to kill. The next year he called me over to select his yard, and he had some as fine as I had. Blood would manifest itself.

3. Don't be afraid to use the hatchet, and as early as the case will admit of, and give your ground to the good stock. They will be out of your way. They are worth more early than late, and will lessen the chances of disease. With some fowls, however, it is impossible to tell what are good, and what are poor chicks. The Brahmas will be awkward and poorly feathered till nearly a year old. With Leghorns and other small varieties, we can tell at four months pretty closely. Kill any chicken with bad comb, crooked back, wry tail, badly colored legs, foreign feathers, general weakness, bad build, or any other defect which will damage it as a breeding fowl.

4. If you have a good strain of fowls, and wish to bring in new blood, do it very carefully. Know that the new blood is all right. It is not best to kill off the old fowls the same season, but breed some of them by themselves that year: in case the new cross is not a satisfactory one, you are not out of your good fowls. It is well to bring in new blood every second or third year. See that the general characteristics of the breed are very marked, and the fowl a strong and healthy bird.

5. If you have good stock, and have eggs or fowls to sell, lay out as much as you can spare in printers' ink. It pays the best of anything. In advertising, it will be necessary to select papers which will reach the class of people who will be interested in poultry. A monthly paper is better than a weekly of the same circulation. The larger the circulation, for the same amount of money per line, the better. This is a point that will need watching. Some publishers will tell the truth as to their circulation, but others will not. In getting out cards or circulars, have them look tasty. The person who buys poultry at high prices is commonly a man of fine tastes, and the manner in which a thing is presented to him makes a great impression. We not only need to have good stock for sale, but we wish to inform those who are likely to buy, and we need to present it in a pleasing way. To put in as few words as possible the most essential rules for a beginner, I would give these:

Good Stock! Work! Square Dealing! Printers' Ink! Now!

6. Is there room for more? Yes; but at the top. There are more than enough of the cheap breeders. They live long enough to send out some very poor stock, and place the whole business in ill repute, but they die young. To this extent the business of fancy

poultry-breeding has been overdone, and three of every four who have commenced, after losing considerable time and money, have dropped out. The trouble with the most of those who have come under my observation has been, that they considered it too easy and light ; or they tried too many varieties at once ; or did not have stock of high enough order, and were not careful enough in mating and breeding ; or they were afraid to advertise, thinking they might lose all ; or they advertised injudiciously—did not, for the money, reach the right number, nor in the right way. If one will commence cautiously and carefully and thoroughly, and not lose courage, there is a good chance for him, and a hundred more ! They cannot hurt the business. The dabsters are the ones who do that. Purchasers after being once gulled, are afraid to try again. They are not afraid of high prices, if they get stock of their money's value.

7. Don't expect to get No. one or two fowls for No. three or four price. If you want exhibition birds, say so, and expect to get them ; but there are many fowls that are from the same stock as the exhibition birds, which will be better for breeders, and prices not so high ; and stock of a still lower grade will demand prices accordingly. Poultry breeders are often censured unjustly by parties who expect to buy first quality fowls at farm prices.



LIGHT COLORED PLYMOUTH ROCK COCK.

FRAUDULENT PRACTICES AMONG POULTRYMEN.

It is a very lamentable fact, but a fact nevertheless, that a class of men are dealing in poultry, incubators and supplies, who, with the aid of poultry papers in which they advertise, and by which means they carry on their nefarious business, should be making baskets behind the bars of a State prison.

It is a great detriment to honest dealers that there are a few who, having no regard for honor, are placing before the public the most attractive advertisements, with false representations of their stock, and after the money is safely pocketed, send out eggs of very inferior stock, or eggs of stock not ordered, and of no merit, or fowls good for nothing.

The crime is still more aggravating when we come to know that these "schuysters" are either in secret compact with the publishers of papers who present their advertisements, which they know to be false, or are paid by way of receiving pay for large advertisements for keeping still, and letting them do the fleecing. Probably more of the latter. All amounts to the same.

I was, in the Summer of 1886, talking with one of the poultry dealers of this city, who has done a very wide business with Wyandottes as a specialty, and who is represented very generally by those who have suffered as an arrant cheat, I told him a party who had bought White Wyandotte eggs of him, and had obtained black, brown, striped and feather-legged chickens, was going to publish him in the poultry papers. He laughed at the idea, and said he could not do it; he himself knew how that was, and I was quite ready to believe him, as I knew of several who had written to the publisher of the Poultry World, a paper in which Mr. Preston had advertised extensively, but no notice was taken of it. I mention this case as one which seems to illustrate the way in which a poultry paper and an advertiser will go "snooks."

The Incubator frauds are another "tough" class, and honest dealers suffer from them the same as honest poultry men do from the practices of cheats in their line. H. S. Waldo, of Quincy, Ill., carried on his business of advertising in the poultry papers his "cheap and perfect" Incubator. The poultry papers continued publishing his advertisement, and after knowing what it was, until the United States Postal Department took the matter in hand, and forbid the delivery of his mail to him. Then the poultry papers, after the man was down, and they had gathered in the ducets, were ready to step on him. "Such a fraud you know."

J. M. Bain, New Concord, Ohio, has a very innocent appearing way of working the public. The first act consists of an article mailed at some distant place, perhaps in Michigan or North Carolina, published in the Agricultural Department of some prominent paper, giving an account of what money was made by a party in that place by hatching chickens in an incubator, and that a home-made one, costing less than five dollars, in which could be hatched over two hundred chickens at once. At the close of the article, which was inserted free, but which if paid for as an advertisement would have cost from fifty to two hundred dollars, he informs the readers that the incubator was made from plans sent to any address by applying, with stamp, to J. M. Bain, New Concord, Ohio. On sending the stamp a large circular is received, giving full directions for working the incubator. At the close Mr. Bain informs the reader that for two dollars he will send a book giving full information as to how to manage it. On sending the two dollars, is received a little pamphlet of 26 pages, of about the size of a postal card, coarse print, on coarse news paper. With my experience in printing, I should say these two dollar books would cost not to exceed twenty-five cents per hundred. The contents are the worse part of it, and amount to simply this: "Sit by the machine night and day, turning up and down the wick of the lamp as the thermometer indicates necessary, for three weeks." He then informs the readers that they should not be discouraged if they get no chicks. Mr. Bain has often been published as a fraud, still he plays his tricks on an innocent paper now and then.

A. M. Lang, Covedale, Ky., publishes a little 25 cent poultry book. All that is truly valuable he has taken from other books, almost word for word, in long paragraphs, and between these he sandwiches in his offer to send receipts for making cholera, roupe, paracite and gape remedy, all for two dollars. In all probability much the same as some receipts printed in this book—free.

These are only samples from a large flock of feathery frauds, given to show my readers the character of the class.

But all poultry dealers must not be put down as of this sort. There are many as conscientious men and women in this business as is found among the foreign missionaries, and they will do their customers justice if they can.

It is sometimes a question whether there is anything especially demoralizing about the "hen business," or whether the already depraved of heart take to it as an excellent opportunity to give their natural depravity good play. Certain it is they are there, and lively workers too, but just how far honest dealers must suffer from them remains more with the publishers of poultry papers to say than any other class. I am persuaded that in this business the same as in every other, one-half of the world must carry the other half on its back.

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DEAR SIR :—As I have handed over to you my choicest fowls of five varieties, I will give you a little statement of what they are, which you are at liberty to use as you may think best.

The Light Brahmas were headed this year by Sampson, No. 6,158, and with him were a fine flock of females, among them Delilah, 6,159, Debora, 6,160, and Timna, 6,161. They are well illustrated on page 5, of "Practical Poultry Keeping." I have made the selection of Light Brahmas with special reference to getting not only birds well marked of the majestic carriage and station characteristic of the Brahma, but to get fowls which are good layers and not persistent setters. I believe I have succeeded, and think there is none better in the country.

The Wyandottes, (see page 25 of "Practical Poultry Keeping,") are originally from the finest flocks I could find, carefully selected and bred. Among the young stock designed for bringing in new blood, are the chicks from the \$5.00 per 13 eggs, which I obtained from the breeder who has taken the first premium at the Madison Square Garden Poultry Show, for the past three years.

The flock of Plymouth Rocks which I hand over to you are from the best flock on exhibition at the above named show. I paid sixteen dollars for three settings of eggs. I was satisfied then as I am now that I was getting the best. You need not hesitate to recommend them, as their blood will bear it.

Among the White Wyandottes is the trio for which I paid twenty-five dollars and soon afterwards refused fifty, and if I did not now regard the consideration which I received from you as better than that I would not have let you have them. They are the finest specimens I know of. I would not push them to the front or you will not be able to fill your orders.

I had a plate made of them which I use in my Practical Poultry Keeping. Page 81.

The White Crested Black Polands, see page 3 Practical Poultry Keeping, are from the flock which took first at the New York State Fair in the fall of 1885, and all the premiums at the New York Show last winter. Their beautiful solid white crest with the glossy black plumage of the body renders them really one of the handsomest of domestic poultry.

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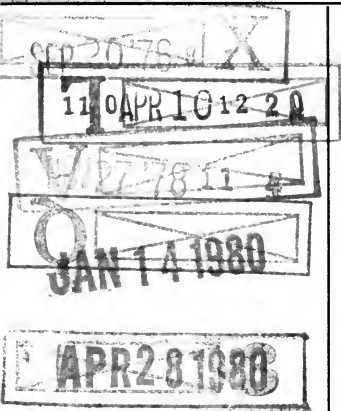
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